NAVFAC Atlantic Biological Resource Services

Contract: N62470-08-D-1008; Task Order: F272

October 10, 2014

Final Interim Measures Work Plan for SWMU 21 - DRMO Storage Lot, Naval Support Activity Crane, Indiana

Prepared for:
NAVFAC Mid-Atlantic
9742 Maryland Avenue
Norfolk, Virginia 23511-3095

Prepared by:
Tetra Tech, Inc.
1320 North Courthouse Road, Suite 600
Arlington, VA 22201

061407/P

FINAL
INTERIM MEASURES WORK PLAN
SWMU 21 – DRMO STORAGE LOT

NAVAL SUPPORT ACTIVITY CRANE
CRANE, INDIANA

NAVFAC ATLANTIC
BIOLOGICAL RESOURCE SERVICES CONTRACT

Submitted to:
Naval Facilities Engineering Command Mid-Atlantic
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NUMBER

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NUMBER

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AST	aboveground storage tank
BaP	Benzo(a)pyrene
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CCA	copper chromium arsenate
COPC	chemical of potential concern
CTO	contract task order
DI	deionized
DO	dissolved oxygen
DPT	direct push technology
DRMO	Defense Reutilization Marketing Office
E&S	Erosion and Sediment
EMAC	Environmental Multiple Award Contract
ERA	ecological risk assessment
FOL	field operations leader
FTMRs	field task modification requests
GIS	geographic information systems
GPS	global positioning system
HASP	health and safety plan
HHRA	human health risk assessment
IA	investigative areas
I-DCL	Industrial Default Closure Level
IDEM	Indiana Department of Environmental Management
IMWP	interim measures work plan
IUPPS	Indiana Underground Plant Protection Services
LDPE	low-density polyethylene
MCGs	media cleanup goals
MCS	media cleanup standard
MSDS	Material Safety Data Sheet
msl	mean sea level
NAVFAC	Naval Facilities Engineering Command
NEESA	Naval Energy and Environmental Support Activity

NOAA	National Oceanic and Atmospheric Administration
NSA	Naval Support Activity
OICC	Officer in Charge of Construction
ORP	oxidation-reduction potential
O/W	oil/water
OWS	oil/water separator
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCP	pentachlorophenol
PID	photoionization detector
PM	project manager
PPE	personal protective equipment
ppm	parts per million
PSLs	project screening levels
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
R-DCL	Residential Default Closure Level
RISC	Risk Integrated System of Closure
RFI	RCRA Facility Investigation
SAIC	Science Applications International Corporation
SAP	sampling analysis plan
SOP	Standard operating procedure
SVOCs	semivolatile organic compounds
SWMU	solid waste management unit
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TOC	total organic carbon
TOX	total organic halides
USCS	unified soil classification system
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds
XRF	x-ray fluorescence

1.0 INTRODUCTION

This Interim Measures Work Plan (IMWP) was prepared for the Defense Reutilization Marketing Office (DRMO) Storage Lot at Naval Support Activity (NSA) Crane, located in Crane, Indiana by Tetra Tech NUS, Inc. (Tetra Tech) as a contractor to the United States Department of the Navy (Navy) under Contract Task Order (CTO) F272, Contract No. N62470-08-D-1008, Naval Facilities Engineering Command (NAVFAC) Atlantic Biological Resource Services The DRMO Storage Lot is also known as Solid Waste Management Unit (SWMU) 21. The IMWP presents the interim measures planned to remediate SWMU 21 soil and sediment that is contaminated with polychlorinated biphenyls (PCBs), lead, and polycyclic aromatic hydrocarbons (PAHs).

1.1 PURPOSE

The purpose of this report is to present the details of the interim measures activities that are planned for SWMU 21: the excavation and off-site disposal of contaminated soil and sediment, and the subsequent restoration of the excavated areas. The interim measures will reduce risks outside of the DRMO fence line to acceptable human health and ecological levels, and inside of the DRMO fence line to acceptable industrial levels.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

NSA Crane is located in a rural, sparsely populated region of south-central Indiana, approximately 75 miles southwest of Indianapolis, 60 miles northwest of Louisville, Kentucky, and immediately east of Burns City and Crane Village, Indiana. A location map of the NSA Crane facility is provided on Figure 1-1. NSA Crane encompasses approximately 62,463 acres or approximately 98 square miles of the northern portion of Martin County; and smaller portions of Greene, Davies, and Lawrence Counties.

The DRMO Storage Lot is an active material processing and recycling facility located in the central part of NSA Crane (Figure 1-1); its southern boundary is approximately 600 feet wide, and lies along the northern side of Route H-58. The north-south oriented site area extends approximately 1,700 feet north from the southern boundary, is triangular in shape, and covers approximately 20 acres in a wooded area, as shown on Figure 1-2. The DRMO Storage Lot (site) has been in operation since the late 1940s as a material processing center. Materials processed at the site include scrap metal, wood, cardboard, and paper. The exact startup date of activities at the site is unknown, but it appears to have been shortly after startup of the NSA Crane facility in the 1940s.

The active area of the DRMO yard is surrounded by a chain link fence; the only entrances are two locking gates at the south end. On-site structures include four occupied buildings: an office and restroom building (Building 2703), two processing buildings (Buildings 3248 and 3249), and two truck/railroad scales and a scale house (Building 2943), as shown on Figure 1-3. One unoccupied abandoned paper baler building (Building 2704), and an inactive oil/water separator [OWS (Structure 3058)] are located in the central part of the site. . The OWS is a 10-foot by 15-foot concrete vault approximately 6 feet deep. It currently holds approximately 3 feet of water, and there is no visible evidence of oil on the water. The OWS was originally designed to collect liquids from: the former Old Metals Baler (2705); and runoff from the northern end of the site, the northern Paved Storage Yard, and the southern portion of the site.

There are two concrete-paved storage areas at the site: one northwest of the OWS, and the other in the southwestern corner of the site. Most of the rest of the site is unpaved and covered with gravel. Gravel has been and continues to be added to the site over the years of operation to maintain a level surface. Because of this effort, the thickness of the gravel ranges from less than 1 foot to 4.5 feet below ground surface (bgs). The area of the site containing the gravel is referred to as the gravel pad. Photos of the buildings, structures, and portions of the site are presented in Appendix A.

SWMU 21 is bounded on the east by Haynes Branch, and to the west by a set of railroad tracks (both are outside of the fenced area). Farther east of Haynes Branch is a wooded area. Farther west of the railroad tracks, and farther north of the site are wooded hillsides. To the south and across Road H-58 is a small (less than 1 acre) storage yard and gravel parking area, which are outside of the SWMU 21 boundary and are not part of SWMU 21.

The nearest residences are approximately 3.5 miles southeast in the small town of Indian Springs, Indiana, and the next nearest residences are approximately 4 miles west-southwest in Burns City, Indiana.

The NSA Crane facility was a rural, forested, and farmed area when it was commissioned as a Navy facility in 1941; the site has been part of the Navy facility since that time. There are no known historical or cultural concerns (such as Native American burial grounds or historic landmarks) on or in the vicinity of the site. There are no land use controls associated with the site.

1.2.2 Media Cleanup Standards

Project Screening Levels (PSLs) for the SWMU 21 site were established based on planned media cleanup standards (MCSs) for the environmental media requiring remediation. The MCS for PCBs is 1 milligram per kilogram (mg/kg) for soils and sediments outside of the DRMO yard fence line, and 25 mg/kg for soils inside the DRMO fenceline. The MCS for lead is 400 mg/kg for soils and sediments outside the DRMO fence line, and 800 mg/kg for soils within the DRMO fence line. The MCS of 1 mg/kg for PCBs and 400 mg/kg for lead will also be applied inside the fenceline to areas immediately adjacent to the fenceline to protect the remediation of areas outside the fenceline. The MCS for PAHs is based on achieving an acceptable benzo(a)pyrene (BaP) equivalents risk within the risk management range of 1E-6 to 1E-4 for industrial receptors. This corresponds to a concentration range of 0.29 mg/kg to 29 mg/kg BaP equivalents, based on the recently revised May 2014 United States Environmental Protection Agency (USEPA) Regional Screening Levels (USEPA, 2014).

1.3 REPORT ORGANIZATION

The other sections of this SWMU 21 IMWP are:

- Section 2.0 presents a general description of the physical characteristics of SWMU 21, and a summary of the data that were used to establish the excavation boundaries for the interim measures planned for SWMU 21. Summary data are presented for PCBs, lead and PAHs. All available SWMU 21 analytical data for soil and sediment samples are included in tables presented in Appendix B of this document.

- Section 3.0 describes the interim measures that are planned for SWMU 21: the locations of the excavation areas, the lateral extent of the surface excavations, and the depth of the subsurface excavations. General requirements that must be met by the remedial contractor during the excavations are also described.

- Section 4.0 presents the Erosion and Sedimentation Control Plan, site restoration, and spill mitigation.

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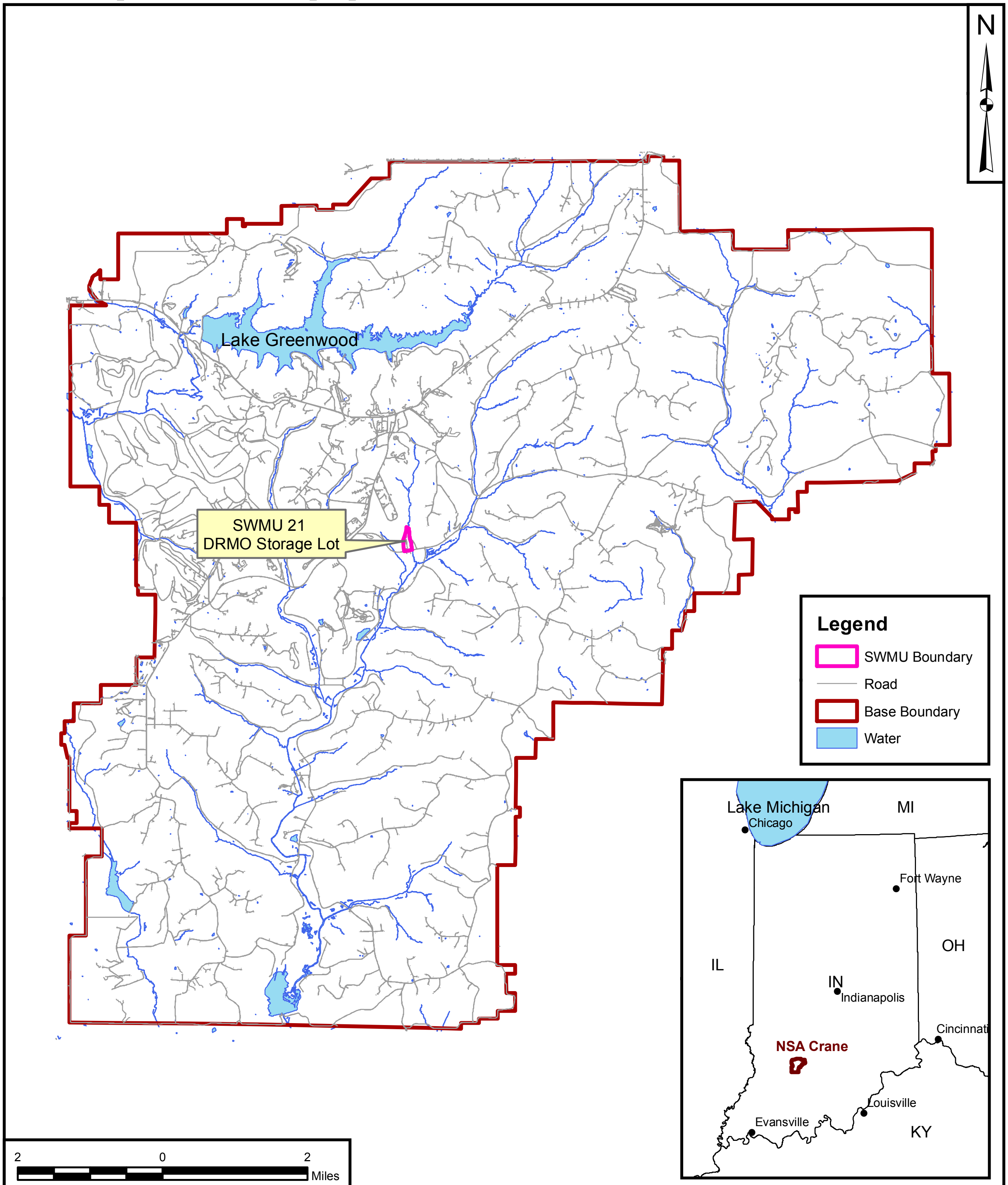

DRAWN BY K. MOORE	DATE 08/05/11	TETRA TECH	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 06/09/14	BASE AND SITE LOCATION MAP SWMU 21 - DRMO STORAGE LOT	APPROVED BY	DATE
REVISED BY S. PAXTON	DATE 06/09/14		APPROVED BY	DATE
SCALE AS NOTED		NSA CRANE CRANE, INDIANA	FIGURE NO. 1-1	REV 0

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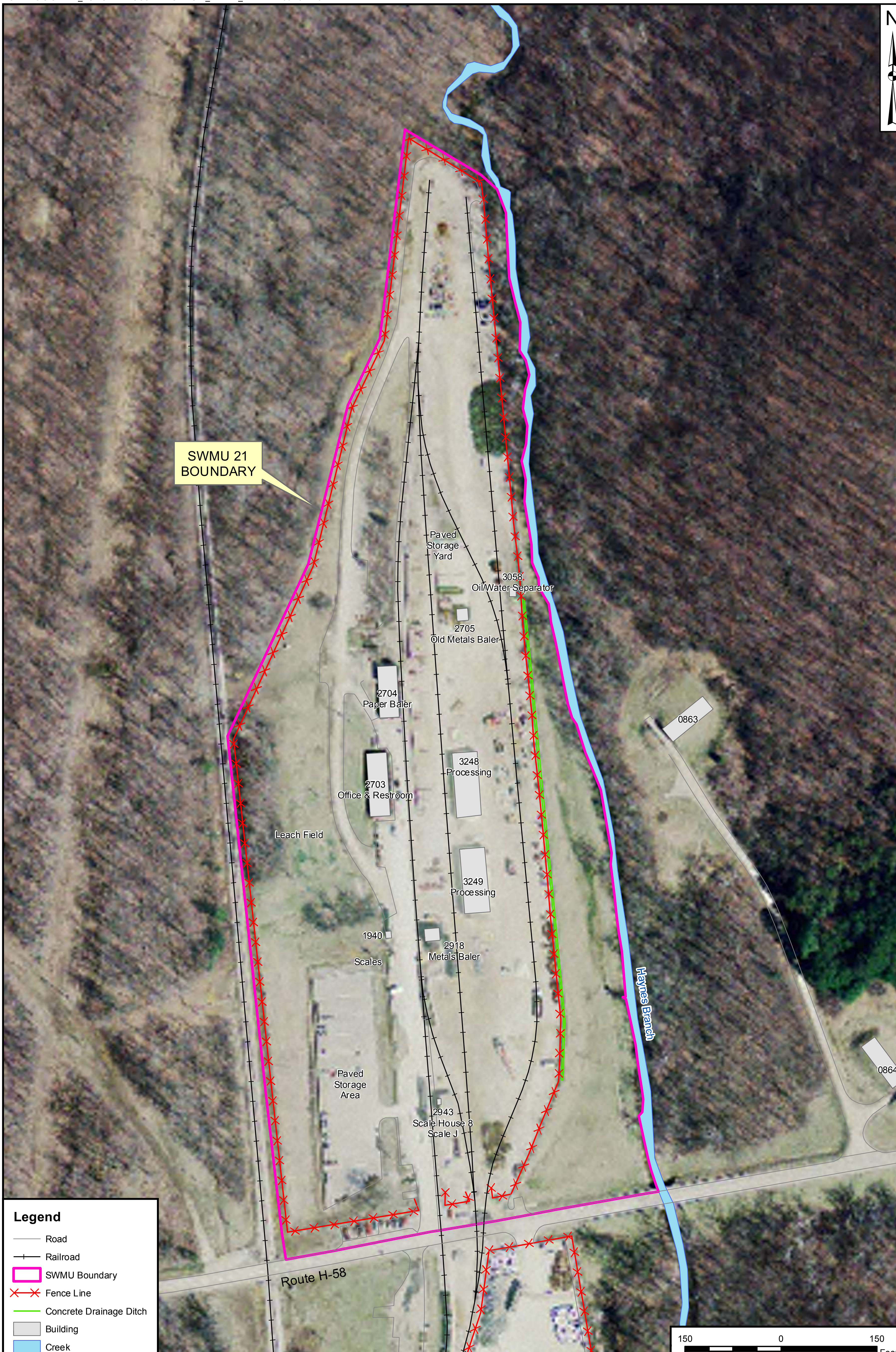

DRAWN BY K. MOORE	DATE 5/29/09	SITE LAYOUT - 2005 AERIAL PHOTOGRAPH SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER	CTO NUMBER F274
CHECKED BY R. BARRINGER	DATE 06/20/14		APPROVED BY	DATE
REVISED BY J. NOVAK	DATE 06/20/14		APPROVED BY	DATE
SCALE AS NOTED			FIGURE NO. 1-2	REV 0

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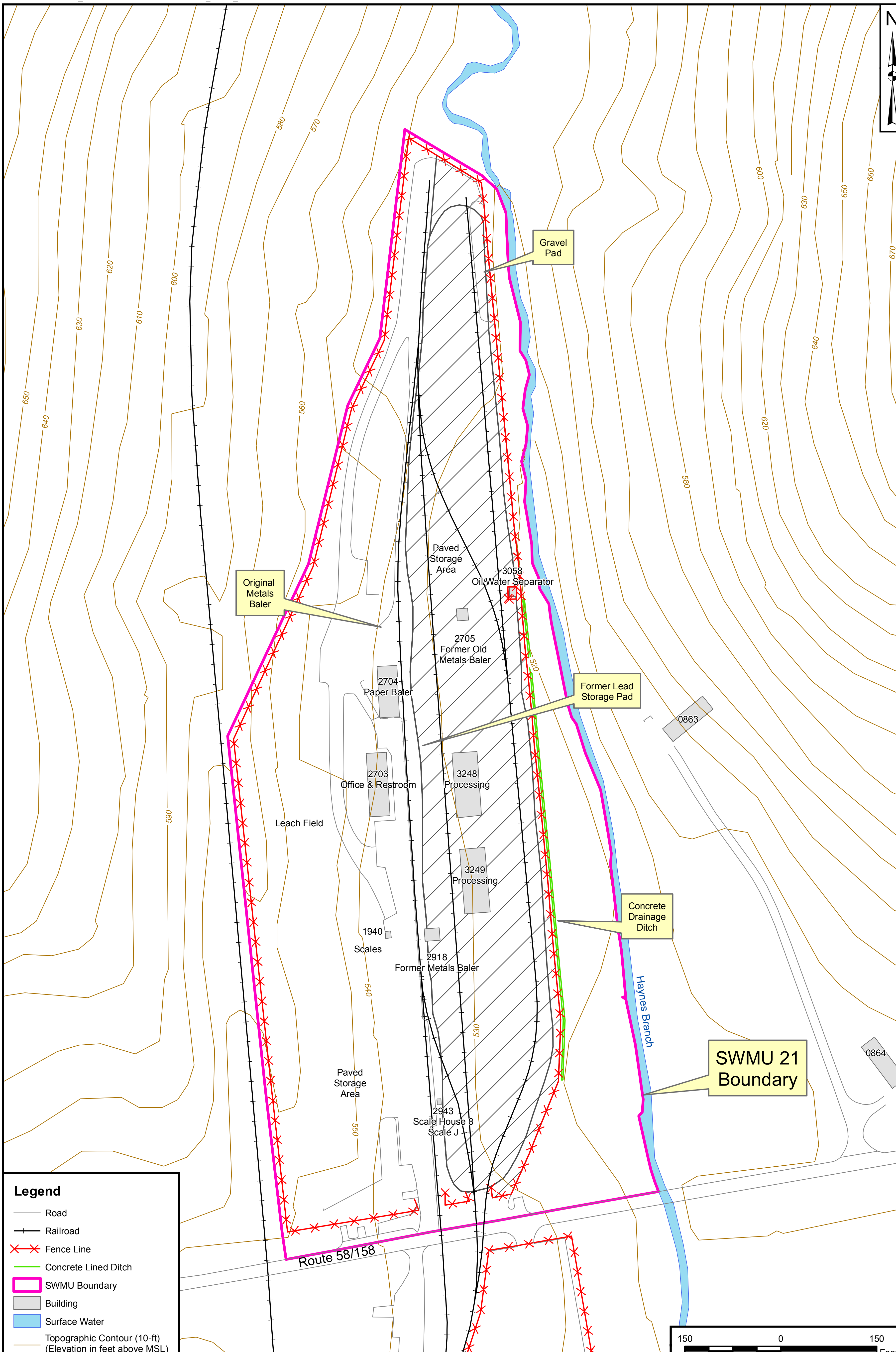

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K. MOORE	5/29/09
CHECKED BY	DATE
R. BARRINGER	06/20/14
REVISED BY	DATE
J. NOVAK	06/20/14
SCALE AS NOTED	

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SITE LAYOUT - ELEVATION CONTOUR MAP
SWMU 21 - DRMO STORAGE LOT
NSWC CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
	F274
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 1-3	REV 0

2.0 SWMU 21 SITE SUMMARY

The following subsections describe the physical characteristics of the areas addressed in this IMWP where interim measures activities will be conducted.

2.1 PHYSIOGRAPHY AND TOPOGRAPHY

As shown on Figure 1-3, the site is located in a valley bottom and slopes from west to east with an elevation change from 570 feet above mean sea level (msl) in the western portion of the site, to 520 feet above msl in the eastern portion of the site. The site also slopes gently from the north to the south. Approximately half of the site is occupied by the fairly level gravel pad at an approximate elevation of 530 feet above msl. The elevation of Haynes Branch is between 515 and 530 feet above msl.

Runoff from the site drains south and east into Haynes Branch, which flows north to south along the eastern side of the site. Haynes Branch joins with Turkey Creek approximately 0.5 miles south of the site, which joins Boggs Branch approximately 2 miles farther south. Boggs Creek flows south and off of the NSA Crane facility approximately 5 miles south of its juncture with Turkey Creek.

The runoff from the southern portion of the site drains into the concrete drainage ditch located immediately east of the chain link fence, which formerly drained into the OWS. Liquids collected at the former Old Metals Baler drained though a 4-inch vitrified tile pipe to the OWS, and a similar pipe conveyed discharge from the OWS to Haynes Branch. Reportedly, the OWS has not been functional for approximately 10 years.

2.2 METEOROLOGY

NSA Crane is located in a warm, temperate climatic zone. In general, the summers are warm and humid, and winters are mild with occasional short cold periods. The daily high temperature ranges from an average July temperature of 89 degrees Fahrenheit (°F), to an average January temperature of 26°F. Precipitation is fairly evenly distributed throughout the calendar year; the maximum precipitation occurs during the spring and early summer. The average annual precipitation at the facility is 44 inches, and consists of 42 inches of rain and 15 inches of snow. The average humidity ranges from 40 to 90 percent in summer, and 60 to 90 percent in winter. Long-term climatological records for the area indicate that the monthly prevailing wind direction is from the southwest from April through December, and from the northwest during January through March [National Oceanic and Atmospheric Administration (NOAA, 1988)].

The annual prevailing wind direction for the region is from the southwest, and the annual average wind speed for the area is about 9.6 miles per hour.

2.3 SURFACE WATER HYDROLOGY

The general topography at SWMU 21 is sloping from west to east toward Haynes Branch, except for the relatively flat area that is between Building 2703 and Building 2704 and the chain link fence to the east.

In general, surface water from the site drains toward Haynes Branch. Surface water from the north part of the site drains directly into Haynes Branch. Surface water runoff from the southeast portion of the site drains into the concrete drainage ditch that at one time drained into the OWS. The concrete drainage ditch is currently filled in places with sediment and vegetation, which impacts its effectiveness as a drainage way (see photographs in Appendix A).

2.4 GEOLOGY

NSA Crane is in the unglaciated Crawford Upland physiographic province of southern Indiana, which is a rugged dissected plateau bordered on the west by the Wabash Lowland, and on the east by the Mitchell Plain. Bedrock geology is mapped as Mississippian sandstones, limestones, and shales overlain by thin Quaternary-age deposits. No surficial groundwater (groundwater within the unconsolidated soil materials) was encountered during the September 2010 and April 2011 RFI and March 2014 delineation activities. Depth to groundwater is unknown.

The exposed bedrock in Haynes Branch on the east side of the site, and small fragments of bedrock recovered during direct push technology (DPT) activities consist of a reddish brown, fine grained sandstone. This formation is the Mississippian Big Clifty Formation. Depth to bedrock at the site was determined during the September 2010 RFI activities; it ranges from 16 feet bgs west of Building 2704, to the exposed bedrock in Haynes Branch. The estimated bedrock elevations range from 523 feet above msl west of Building 2704, to 513 feet above msl in Haynes Branch.

2.5 SOILS

During SWMU 21 RFI and delineation activities, over 300 soil borings were installed to depths ranging from 2 feet bgs to 16 feet bgs. The soil samples collected from these borings showed that the surface sediments were generally a dry to moist, brown, silty clay. The deepest boring, 21SB41 encountered a 1-foot thick gravel layer and dry brown silty clay from 1 foot bgs, to the top of bedrock at 16 feet bgs. Bedrock was described as reddish brown mottled sandstone. A black ash layer was encountered in several borings. The black ash layer from 1-foot to 2-feet bgs in SB19 was analyzed and contained PAHs that exceeded the PSLs. A soil sample collected immediately below the ash layer was analyzed, and no PAH exceedances were detected.

The soil below the main portion of SWMU 21 (including the gravel pad) is identified as a member of the Zanesville-Udorthents Group in the Soil Survey of Martin County, Indiana [United States Department of Agriculture (USDA), 1988]. The soil on the hillside on the western part of the site is the Willston-Gilpin soil, and the soil in the immediate area of Haynes Branch is the Haymond Group.

The Zanesville-Udorthents soil is described as moderately sloping, deep, well drained to moderately well drained silt loam developed in the natural drainage ways. Udorthents describes soil that has been affected by construction activities which occurred at SWMU 21. This silt loam has low organic matter, moderated permeability, and moderate surface runoff. Near the top of bedrock the soil is a friable silt loam.

The Willston-Gilpin soils are described as deep and moderately deep, gently sloping to very steep, well-drained soil formed from loess and material weather from sandstone, siltstone, and shales on uplands. The Haymond soils are described as a frequently flooded, bottom land brown silt loam. In places, the Haymond soil includes thin strata of sandy loam, and in some places more clay near the stream banks. These soil descriptions are consistent with the surface and subsurface soils collected during the September 2010 and April 2011 RFI activities.

2.6 HYDROGEOLOGY

No groundwater was encountered during the September 2010 or April 2011 RFI activities, or the 2014 delineation sample collection. All borings terminated at bedrock or above bedrock in the surficial soil. There are no bedrock groundwater wells to provide a definitive groundwater depth in the immediate area of SWMU 21. However, Haynes Branch does have a constant year around water flow, and the portion of Haynes Branch near Highway 58 has a gravel base with an increased amount of stream flow compared to the north end of the site which indicates a groundwater discharge point.

The general slope of the site is to the east and southeast, and often groundwater flow direction mimics topography. Based on the site topography, the general groundwater flow direction is likely to the east and southeast towards Haynes Branch.

2.7 DEMOGRAPHY AND LAND USE

NSA Crane is located in a rural, sparsely populated region of south-central Indiana. The NSA Crane operations consist of weapons support and logistics. Most of the NSA Crane daily working population is located 1.5 miles north of SWMU 21. However, SWMU 21 is an active salvage yard with a daily work force of approximately 10 people. The daily activities take place within the fenced area of SWMU 21, and the site is secured during non-working hours.

2.8 ECOLOGY

The NSA Crane facility includes developed areas, wooded areas, and old agricultural fields in various stages of biological succession. Eighty percent of NSA Crane's approximately 63,000 acres is classified as Central Hardwoods Forest of the United States [Naval Energy and Environmental Support Activity (NEESA), 1983]. The hillside communities include hickory, white and black oak, red maple, sugar maple, tulip poplar, ash, and beech. Areas that tend to be wetter, such as the area along Haynes Branch, have river birch, willow, sycamore, and cottonwood.

The wildlife habitats and vegetation types present at NSA Crane (including many stages of forest succession, streams, ponds, Greenwood Lake, and grassy open spaces) support a diverse terrestrial and aquatic fauna. The abundance of wildlife is mainly the result of the mixture of landforms and vegetation types that occur over the installation. There is an adequate amount of forage materials, concealment opportunities, and shelter locations to support a highly diverse wildlife community at the site.

SWMU 21 is a developed 20-acre site located at the base of the hillside community of hardwood trees. Much of the site is covered with gravel or paved, and provides little ecological habitat. However, the grassy and small wooded areas east and west of the main operating areas of the site, and Haynes Branch can support wildlife. There are no lakes, ponds, or wetlands at SWMU 21.

Terrestrial habitats (such as the wooded and grassy areas adjacent Haynes Branch, and Haynes Branch itself provide shelter and food sources for various species of mammals, birds, various amphibians, reptiles, fish, and invertebrates. A total of 46 distinct fish species were collected from the installation during a 1987 inventory of fish fauna at NSA Crane, and 16 species of fish (none of which were unusual to the area) were observed in Turkey Creek. Many small fish, less than 3 inches in length, were observed in Haynes Branch pools during the RFI activities. Haynes Branch flows directly into Turkey Creek.

Haynes Branch flows from north to south along the entire 1700-foot east side of the site. Haynes Branch is generally a straight north-south stream, approximately 15 to 20 feet wide, with a rocky and sediment base and in places sandstone bedrock base (see photographs in Appendix A). The stream flows throughout the year, indicating that groundwater discharges into the stream. The stream is generally shallow during normal flow with pools no deeper than 1 foot. The Haynes Branch riparian zone along the southern half of the site includes wooded areas to the east, and mowed grassy areas to the west. The riparian zone along the north half of the site is wooded both east and west of the stream (see Figure 1-2). Haynes Branch north and south of SWMU 21 exhibits natural stream meanders through the wooded habitat of the NSA Crane facility.

2.9 ANALYTICAL DATA

Appendix B includes all of the analytical data that have been collected for all media at SWMU 21. The following figures present a summary of the PCBs, lead, and PAH contaminant levels at SWMU 21 in the areas designated for excavations.

- Figure 2-1 (Figure Index Map) shows the entire DRMO and the index to the subareas.
- Figures 2-2, 2-2A (North Area Sample Locations).
- Figures 2-3, 2-3A (North Central Area Sample Locations).
- Figures 2-4, 2-4A, 2-4B (Central Area Sample Locations).
- Figure 2-5 (Southwest Area Sample Locations).
- Figures 2-6, 2-6A (Haynes Branch Sediment Sample Locations).

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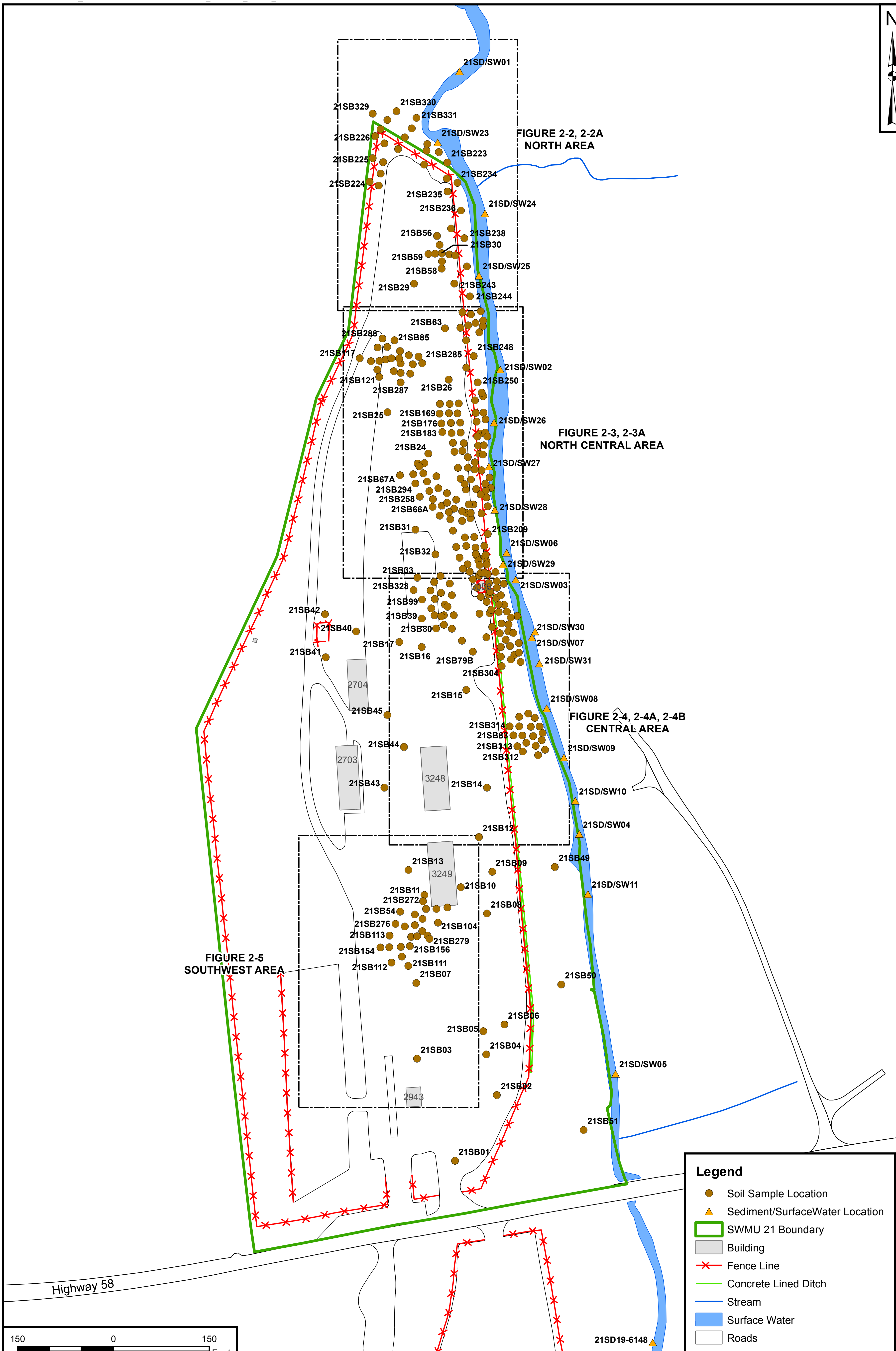

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FIGURE INDEX MAP
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
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FIGURE NO. 2-1	REV 0

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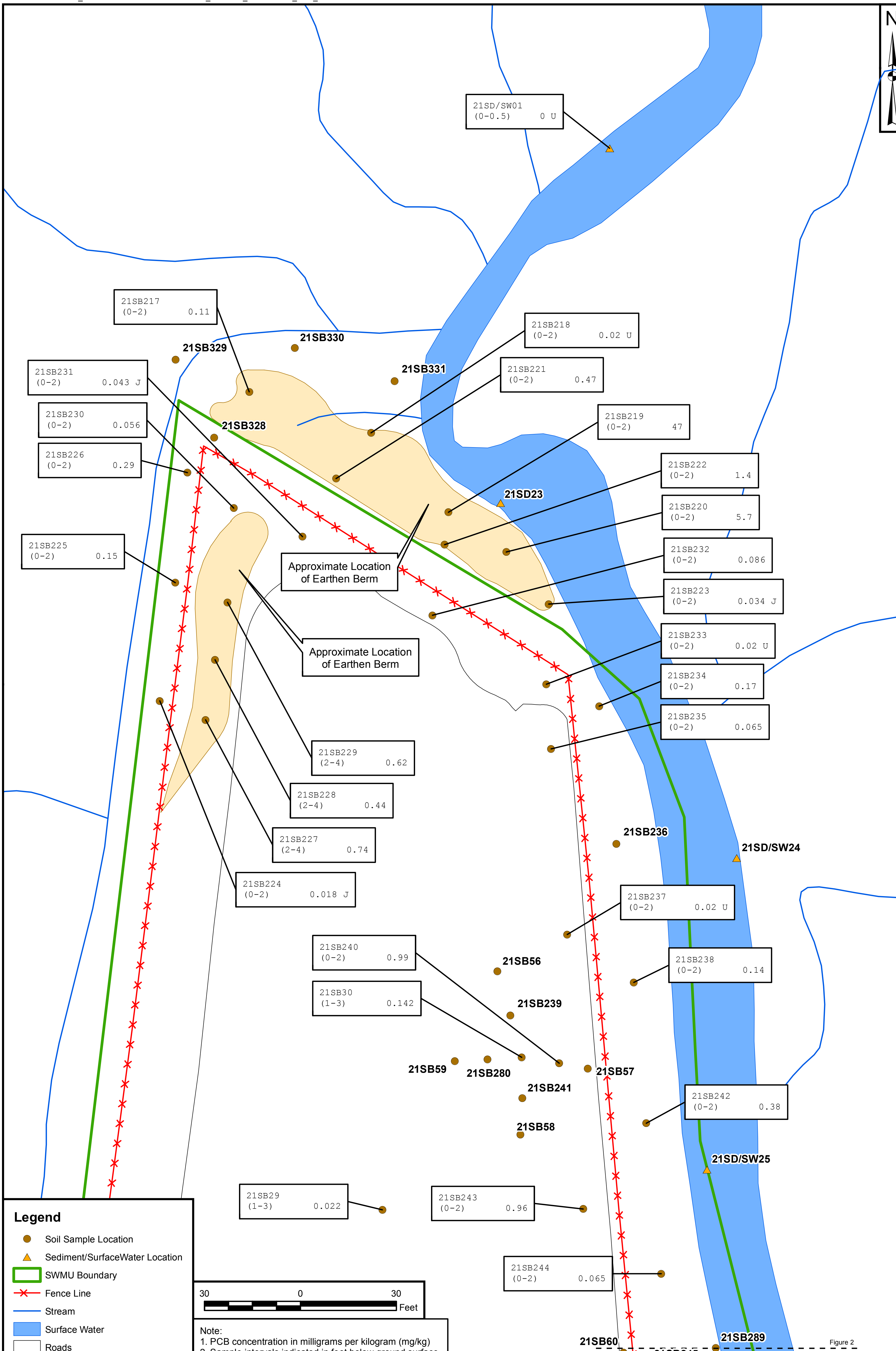

DRAWN BY J. NOVAK	DATE 12/04/12	NAVFAC	NORTH AREA - PCB IN SOIL & SEDIMENT SAMPLE LOCATIONS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018 / CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 06/20/14			APPROVED BY ____ / DATE ____
REVISED BY ____	DATE ____			APPROVED BY ____ / DATE ____
SCALE AS NOTED				FIGURE NO. 2-2 / REV 0

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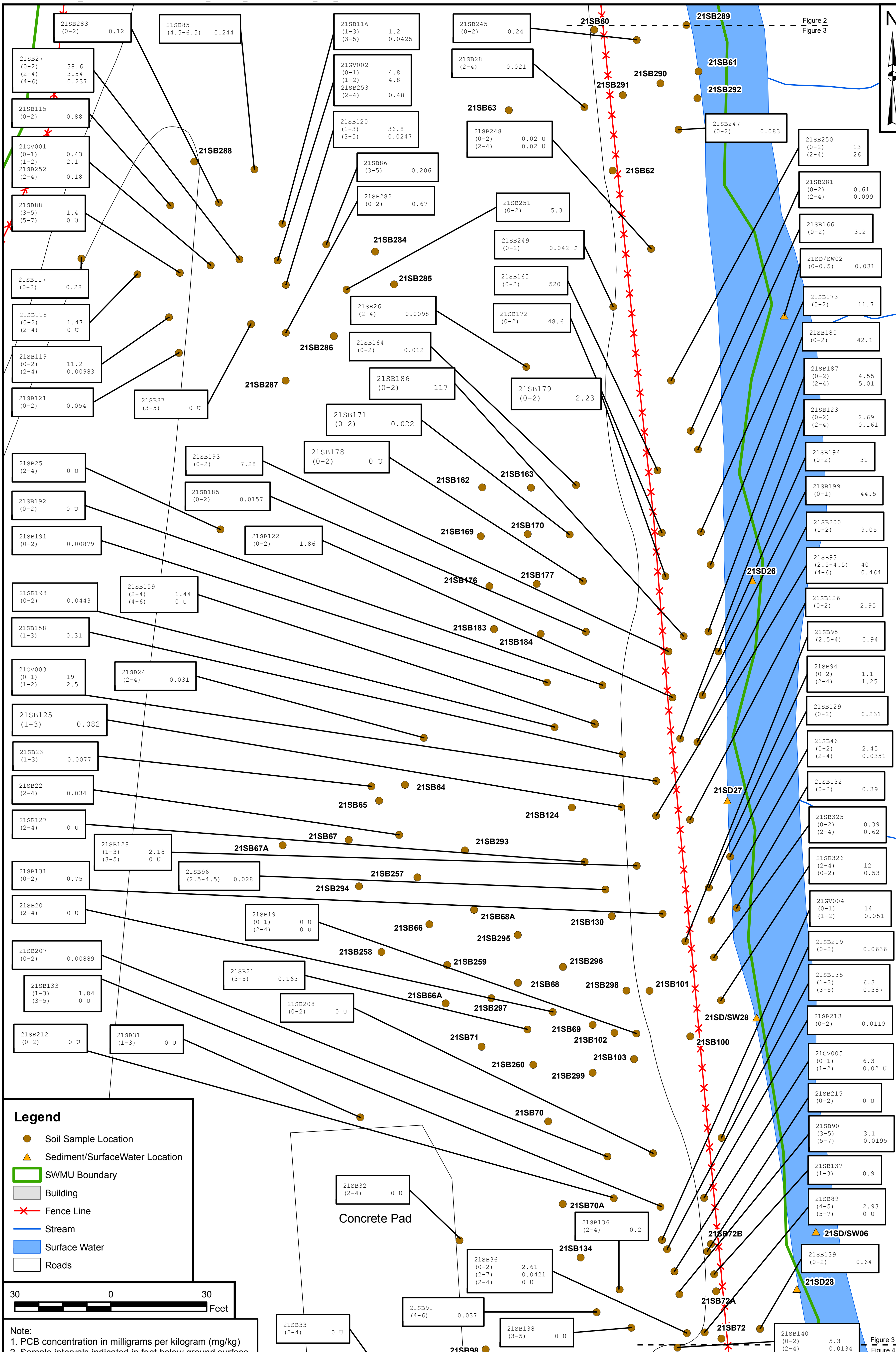

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NORTH CENTRAL AREA - PCB IN SOIL AND SEDIMENT
SAMPLE LOCATIONS
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
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APPROVED BY	DATE
FIGURE NO. 2-3	REV 0

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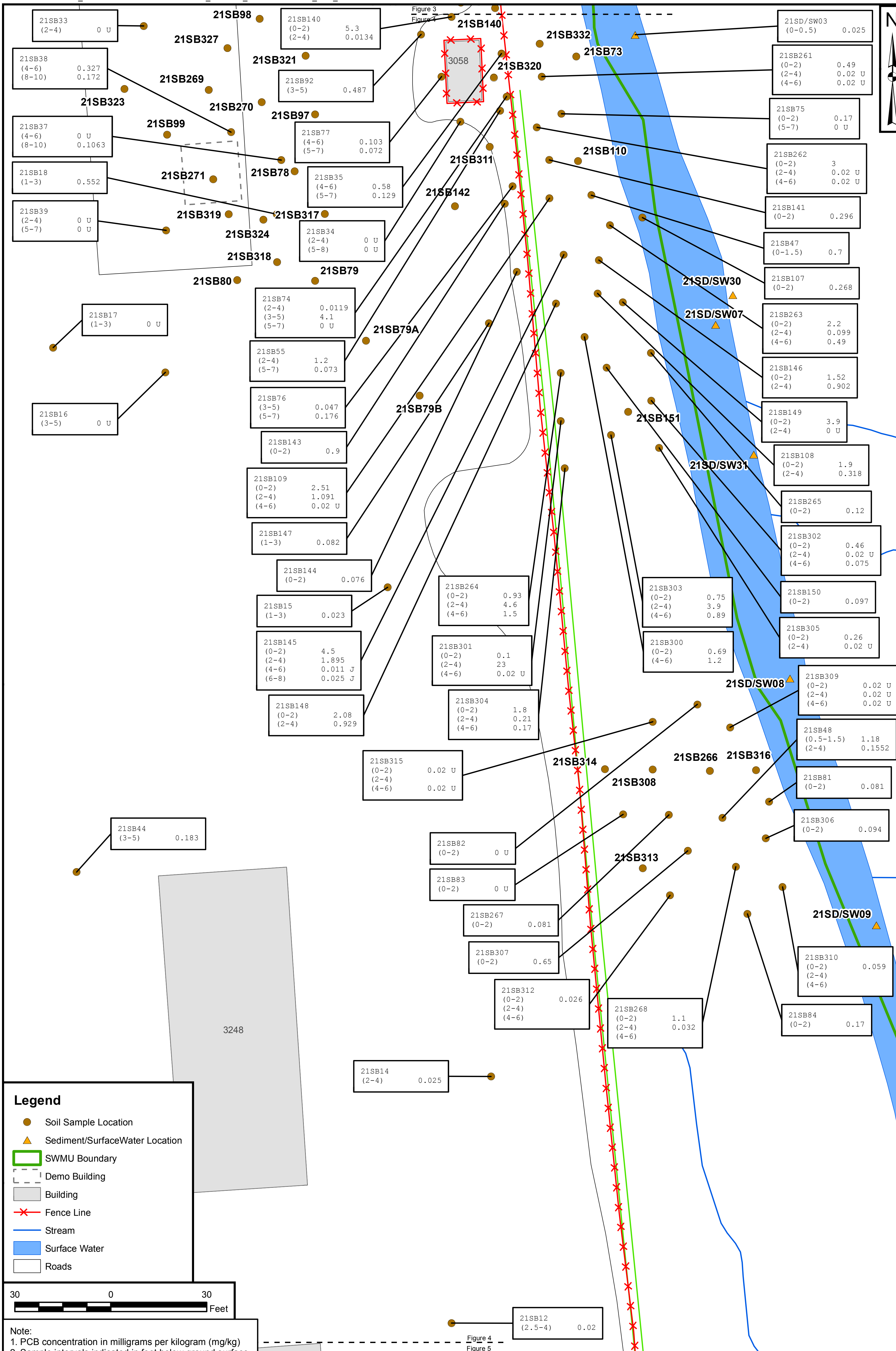

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J. NOVAK	06/20/14			6018	F272
CHECKED BY	DATE			APPROVED BY	DATE
R. BARRINGER	06/20/14			___	___
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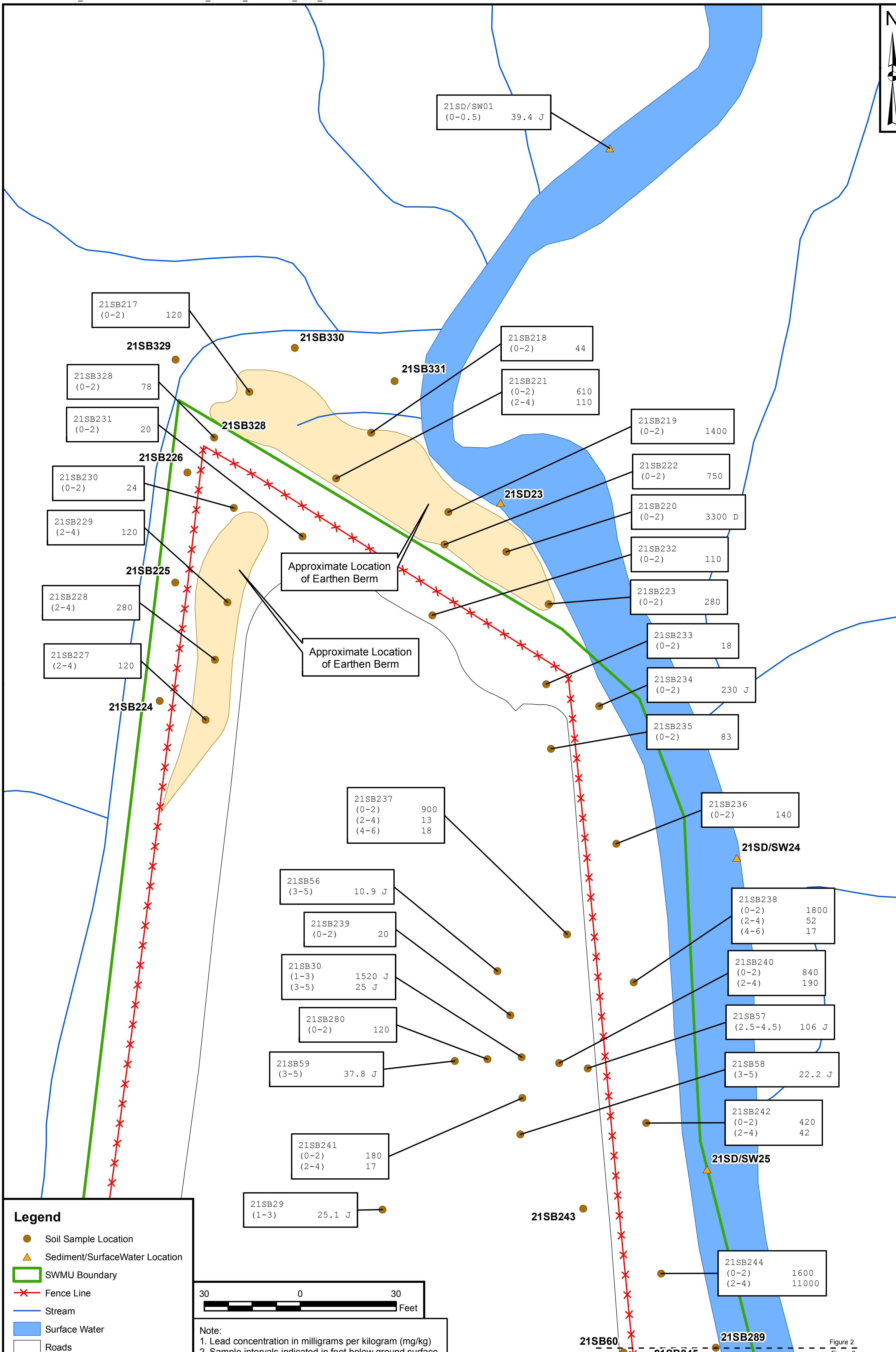
SCALE				FIGURE NO.	REV
AS NOTED		NAVFAC		2-4	0



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CHECKED BY: R. BARRINGER	DATE: 06/20/14			APPROVED BY: ____	DATE: ____
REVISED BY: ____	DATE: ____			APPROVED BY: ____	DATE: ____
SCALE: AS NOTED				FIGURE NO.: 2-2A	REV: 0

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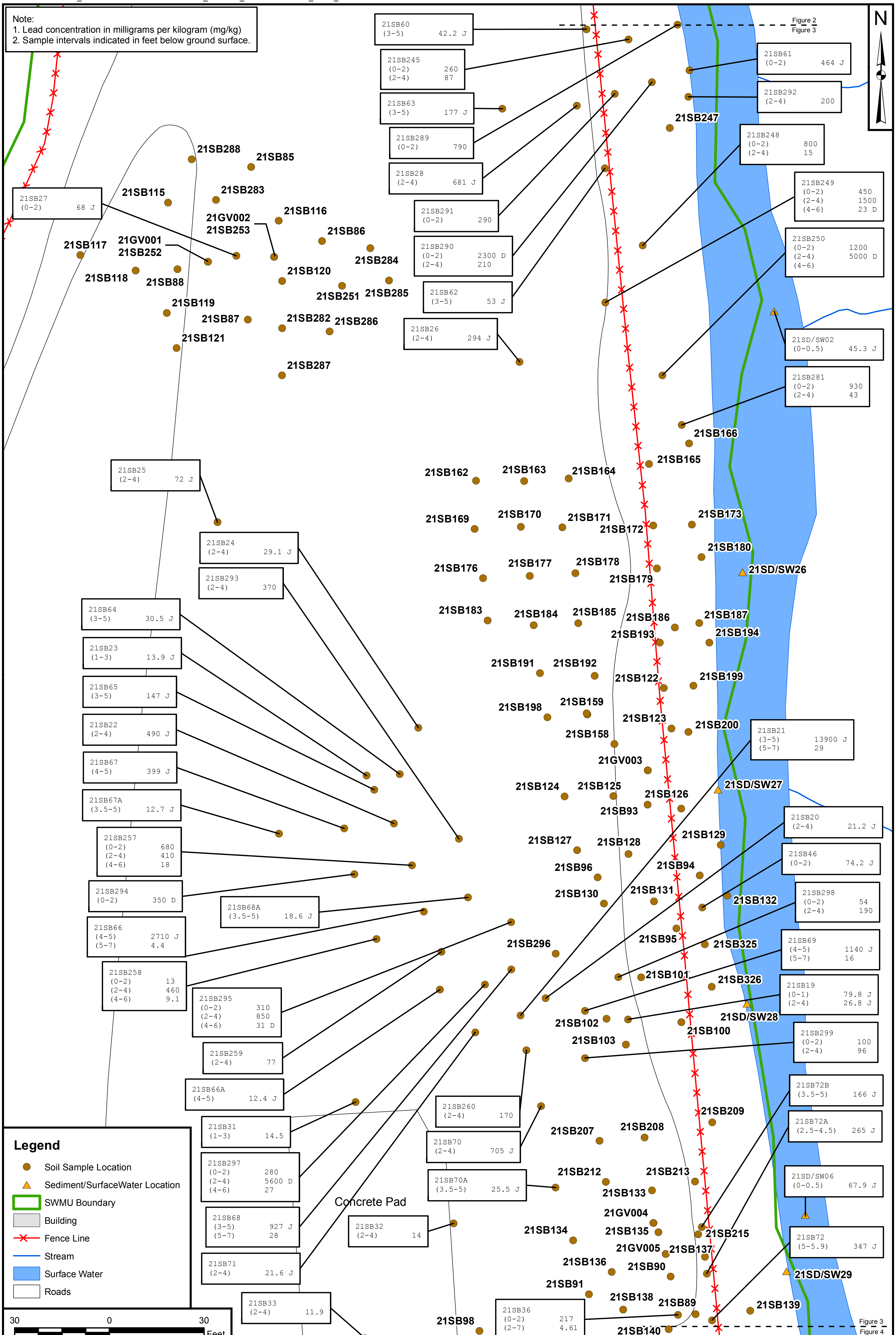

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CHECKED BY	DATE	SAMPLE LOCATIONS	APPROVED BY	DATE
R. BARRINGER	06/20/14	SWMU 21 - DRMO STORAGE LOT		
REVISED BY	DATE	NSA CRANE	APPROVED BY	DATE
SCALE		CRANE, INDIANA	FIGURE NO. 2-3A	REV 0
AS NOTED		NAVFAC		

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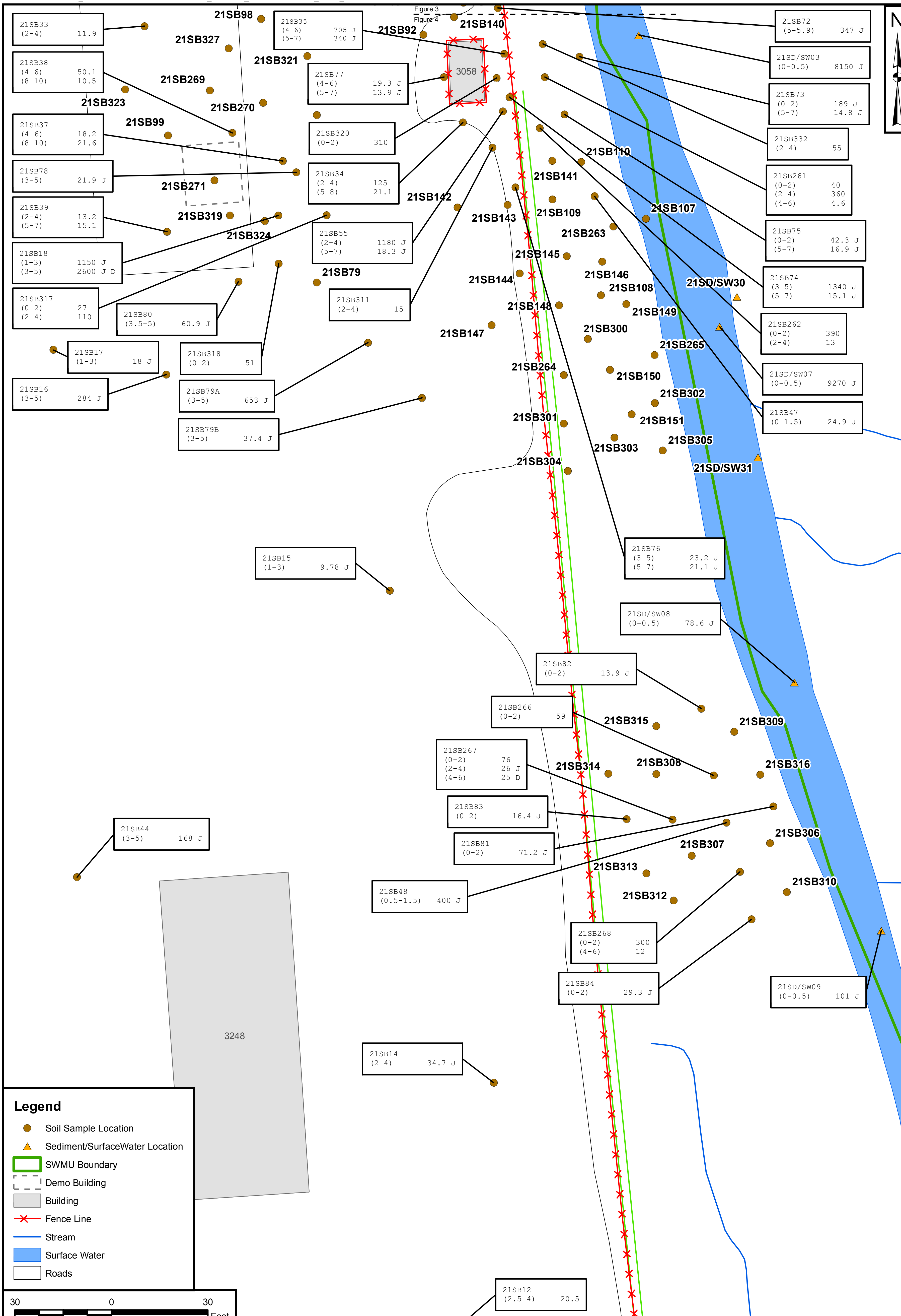

Note:
1. Lead concentration in milligrams per kilogram (mg/kg)
2. Sample intervals indicated in feet below ground surface.

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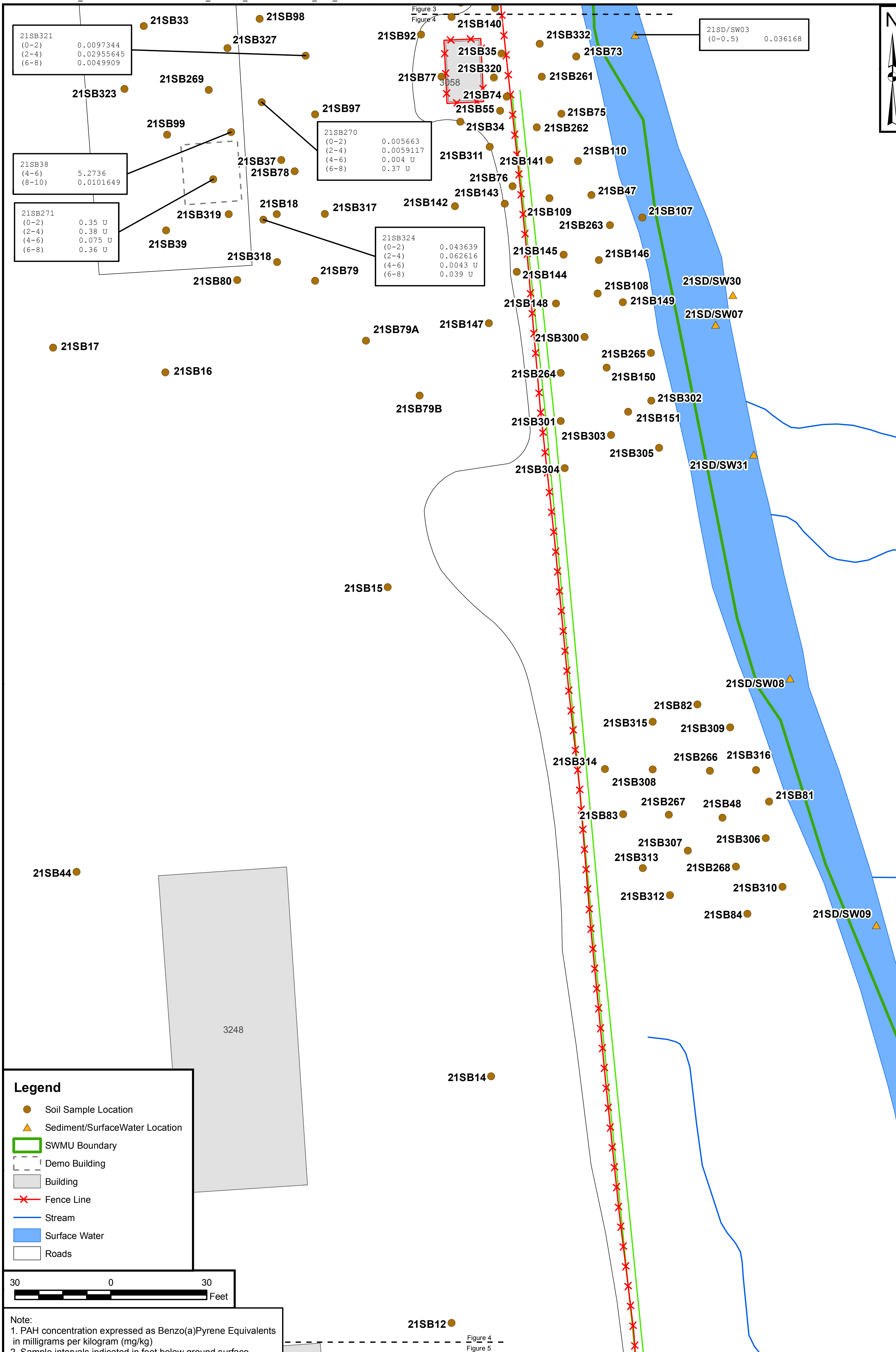
SCALE	
AS NOTED	

NAVFAC

CENTRAL AREA - LEAD IN SOIL & SEDIMENT
SAMPLE LOCATIONS
AND PROPOSED SEDIMENT LOCATION
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

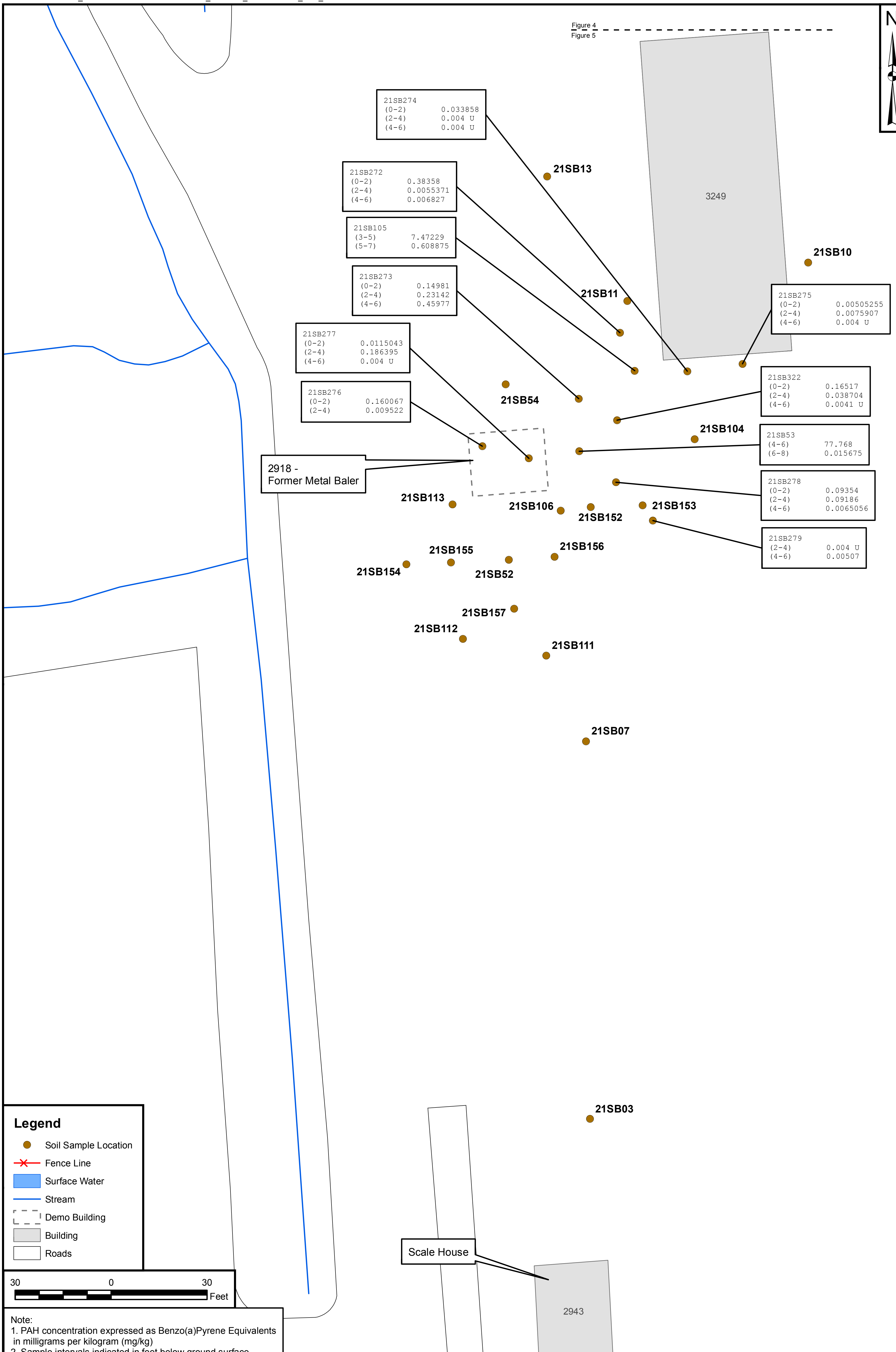
CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 2-4A	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SAMPLE_SOUTHCENTRAL_BAP_TAGS.MXD 06/20/14 JN



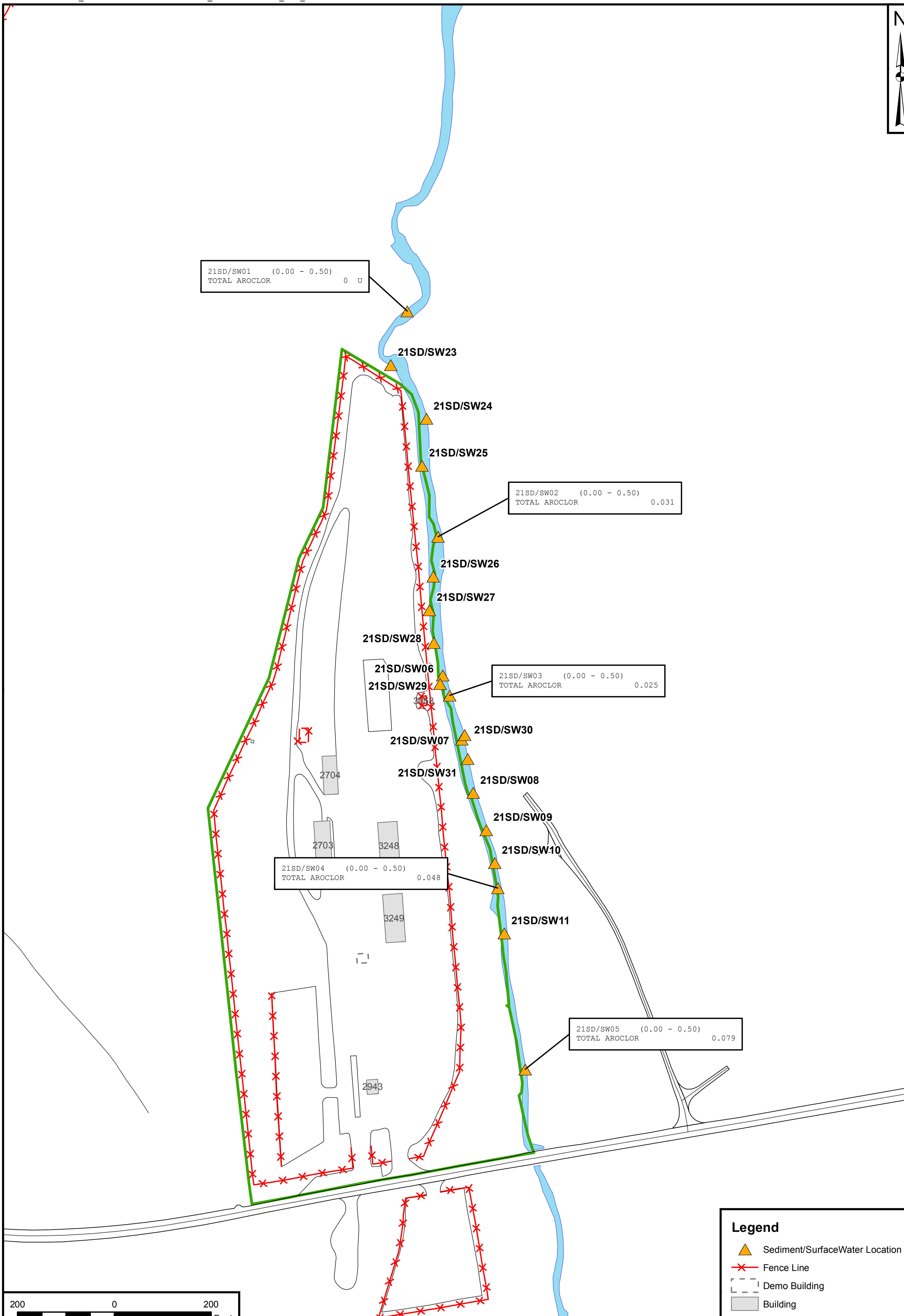
DRAWN BY: J. NOVAK	DATE: 06/20/14	CENTRAL AREA - PAHs in SOIL & SEDIMENT SAMPLE LOCATIONS AND PROPOSED SEDIMENT LOCATION SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER: 6018 / CTO NUMBER: F272
CHECKED BY: R. BARRINGER	DATE: 06/20/14		APPROVED BY / DATE
REVISED BY	DATE		APPROVED BY / DATE
SCALE: AS NOTED			FIGURE NO. 2-4B / REV 0

NAVFAC



DRAWN BY: J. ENGLISH	DATE: 06/20/14	SOUTHWEST AREA - PAHs IN SOIL SAMPLE LOCATIONS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER: 6018	CTO NUMBER: F272
CHECKED BY: R. BARRINGER	DATE: 06/20/14		APPROVED BY: ____	DATE: ___
REVISED BY: ____	DATE: ____		APPROVED BY: ____	DATE: ____
SCALE: AS NOTED			FIGURE NO. 2-5	REV 0

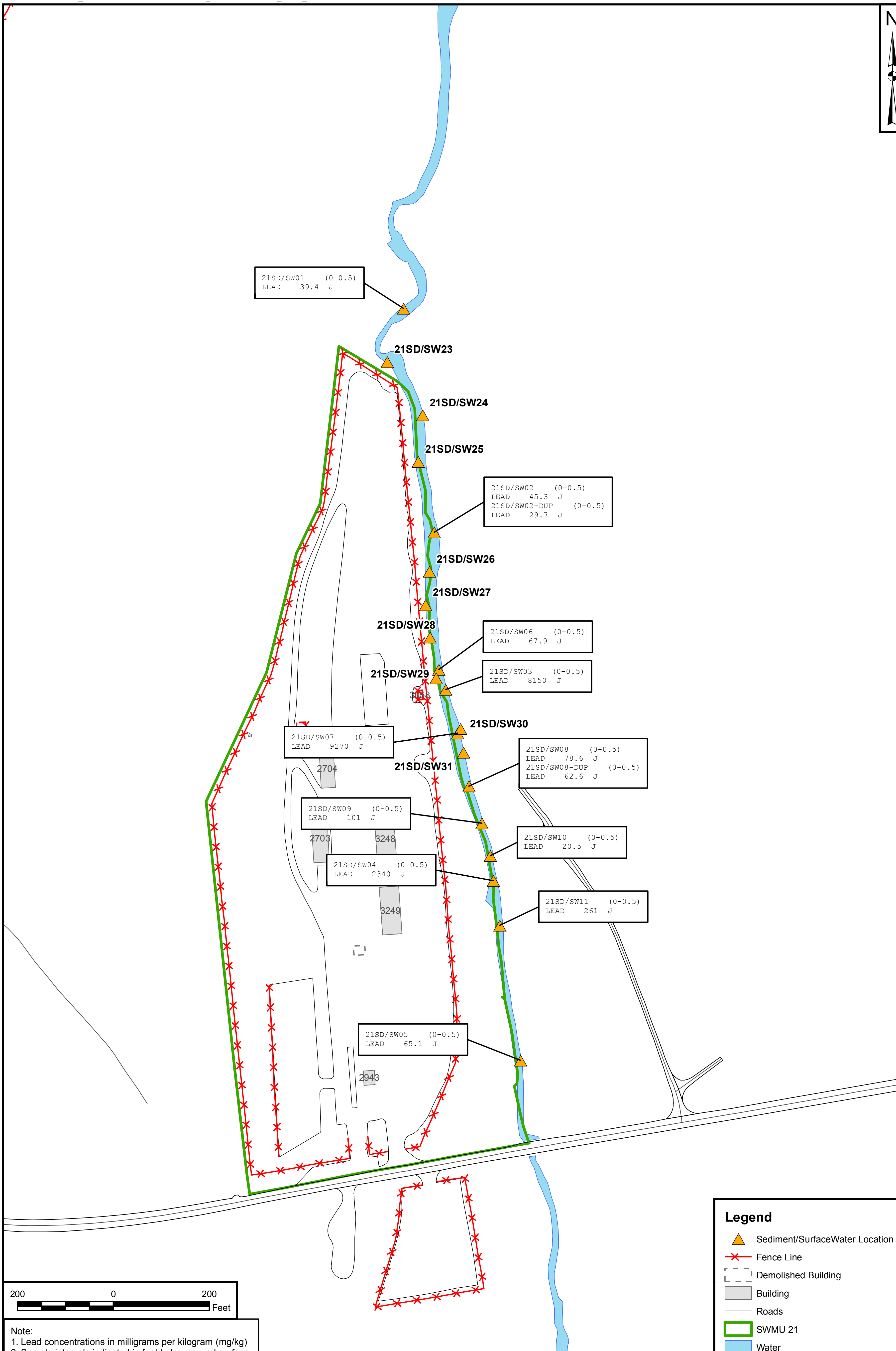
PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_HAYNESBRANCH_PCB_TAGS.MXD 06/20/14 JN



Note:
1. PCB concentrations in milligrams per kilogram (mg/kg)
2. Sample intervals indicated in feet below ground surface.

DRAWN BY J. NOVAK	DATE 06/20/14		HAYNES BRANCH	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 06/20/14		PCB SEDIMENT SAMPLE LOCATIONS	APPROVED BY	DATE
REVISED BY	DATE		SWMU 21 - DRMO STORAGE LOT	APPROVED BY	DATE
SCALE AS NOTED		NAVFAC	NSA CRANE CRANE, INDIANA	FIGURE NO. 2-6	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_HAYNESBRANCH_LEAD_TAGS.MXD 06/20/14 JN



Note:
1. Lead concentrations in milligrams per kilogram (mg/kg)
2. Sample intervals indicated in feet below ground surface.

DRAWN BY J. NOVAK	DATE 06/20/14	HAYNES BRANCH LEAD SEDIMENT SAMPLE LOCATIONS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018 / CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 06/20/14		APPROVED BY ___ / DATE ___
REVISED BY ___	DATE ___		APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. 2-6A / REV 0

3.0 INTERIM MEASURES WORK PLAN

The interim measures for SWMU 21 are the excavation and off-site disposal of soil and river material having concentrations of PCBs, lead, and PAH compounds (expressed as BaP equivalents) above specific risk levels; these measures will reduce average site-wide risks to more acceptable levels. This section of the IMWP describes the limits and methods of removal and off-site disposal of contaminated soil and river material, and the restoration of the excavated areas.

3.1 DESCRIPTION OF THE INTERIM MEASURES

Contaminated soil will be removed from 15 general areas (5 PCB areas, 8 lead areas, and 2 PAH areas) at SWMU 21 which have been contaminated by materials that were temporarily managed, staged, or placed at the DRMO storage lot at NSA Crane. In addition, this IMWP specifies the restoration of these general excavations. Removal of the soils from these areas will reduce site-wide exposure risks for PCB, lead, and PAHs. The volumes presented for excavation are in-place estimates. It is anticipated that these volumes will increase after the soil is excavated prior to loading and off-site disposal. Three discrete stream segments of Haynes Branch will have the river materials removed to address four identified sediment locations with lead contamination as well as other metals.

The removal of contaminated soil from SWMU 21 will impact various infrastructure elements at the DRMO. Many of the discrete areas identified for removal of soil or river materials will require the removal of the DRMO fence to either access work areas outside the fence or to allow removal of soil that straddles the fence line. Temporary movable fencing will be needed to maintain perimeter security and restrict access to the DRMO facility during the implementation of the IM at SWMU 21. At the conclusion of the IM project, and after designated areas have been remediated and restored, the DRMO perimeter fence will need to be reinstalled to match pre-disturbance conditions.

An unused railroad spur runs the full length of eastern side of DRMO fence line, approximately 30 feet west (inside) the fence line. There will be specific track lengths that will need to be removed in order to remove the underlying contaminated soil materials. In excavated areas the rail line will not be replaced. If the railroad rails are to be recycled, then they will be wiped down with kerosene/mineral oil, prior to recycling if the track was removed from a PCB area. The contractor must dispose of any kerosene/minerals oil wastes and rags in accordance with applicable waste management regulations. If the track was removed from a lead area, then all potential lead dust residues should be wiped off the rails prior to recycling. Other elements from the railroad track spur that will require removal in excavation areas, such as gravel ballast or the wooden railroad ties, will be disposed with the soil removed from those specific excavations.

Underground utilities are present throughout the length of the DRMO property. Additional DRMO area infrastructure that will be encountered during the soil removal includes multiple subsurface pipelines (e.g., storm water pipelines) and other underground utilities. It is essential that the EMAC obtain the required utility clearances for all areas proposed for disturbance and excavation. Subsurface utilities encountered during the excavation process will either left in place (if possible) or, if removed during excavation, will be replaced with similar materials by the EMAC.

Various storm water drainage pipes were observed outside the fence line throughout the length of the DRMO. Any storm water drainage pipes that are encountered during the excavation will either be left in place during the excavation or if removed during the excavation will be replaced in kind.

An unused oil/water separator (OWS) constructed of one-foot-thick concrete walls is present along the DRMO fence line in areas identified for excavation. This OWS will not be removed, but the contaminated soil surrounding the unit will be removed up to the OWS exterior wall. Any pipelines encountered during soil excavations will be left in place or restored. A similar situation exists for a concrete pad on the ground surface for one of the PAH soil removal areas. The PAH-contaminated soils will be excavated, up to the perimeter of the concrete pad, but not beneath the pad.

There are approximately 750 feet of concrete-lined open V-ditch just outside and parallel to the DRMO fence line on the eastern perimeter. This V-ditch discharges into the unused OWS which discharges to the adjacent segment of Haynes Branch. Approximately 130 feet of this concrete-lined V-ditch will require removal to access the contaminated soil below. Within designated IM soil excavation areas the V-ditch will be removed and will not be replaced or reconnected to the OWS. The area of the former V-ditch will be contoured with the existing slope and modified so the northern end of the former V-ditch will convey the collected drainage water directly to Haynes Branch.

Miscellaneous metal scrap debris is present within the earthen berm north of the DRMO fence line (to be removed), scattered across the DRMO area, observed within the soil and stream bank materials along Haynes Branch, and also present within the streambed of Haynes Branch. The contractor will be required to dispose of recovered scrap debris. If scrap metal is recycled, then the metal from lead areas will be cleaned to remove soil particles prior to recycling. Scrap recovered from the PCB areas will be surface cleaned with kerosene/mineral oils before recycling to address potential PCB residues. If recovered scrap metal is not recycled by the EMAC, then it will be disposed in the same manner as the underlying soil or Haynes Branch materials (whether lead, PCBs, or PAHs). Empty shell casings have been observed in DRMO areas requiring remediation. Encountered empty shell casings will be separated from other recovered debris for final disposition by the Navy.

The lead-contaminated materials to be removed from Haynes Branch include sediments, rocks, gravel, and cobbles up to 6-inches in diameter. The materials removed from the river bed will be placed on a dewatering pad and allowed to dewater by gravity drainage. The liquids from the dewatering process will be directly discharged back to Haynes Branch. In order for personnel and equipment to access Haynes Branch, the riparian vegetation (primarily trees and brush) along the western river bank and floodplains will need to be removed. Trees and woody vegetation will be cut to within a foot of the ground surface. The cut vegetation will be placed outside the contamination area. The remaining vegetation within a foot of the ground surface including subsurface root masses and stumps will be handled the same as the soil for the specific subarea where they were encountered.

A work assignment responsibility chart (Table 3-1) identifies the responsibilities that the Contractor, NSA Crane, and Tetra Tech will have in the IMWP implementation. The DRMO Storage Lot (SWMU 21) is an active facility on the NSA Crane installation; therefore, the Contractor must coordinate the planned performance of the IM site activities on a daily basis with the DRMO Area Supervisor to avoid impacting essential DRMO activities, operations, or otherwise compromising DRMO site security. The Contractor is also responsible for the preparation of manifests for government signature to document the disposal of specified soil as hazardous waste soil and other soil as non-hazardous waste soil, as described in the sections that follow. The Contractor will perform adequate characterization sampling of contaminated soil to confirm and verify that excavated soil is managed, transported, and disposed in accordance with applicable regulatory requirements. Certain soil volumes containing higher concentrations of lead contamination may be stabilized by the Contractor at the site (prior to loading and transportation) to reduce the potential for lead migration from the soil (as quantified during TCLP testing) and facilitate the management and disposal of those stabilized soil volumes as non-hazardous materials.

Tetra Tech will perform confirmation sampling of specific excavation areas when pre-excavation soil analytical data and stream bed material analytical data are insufficient to identify the limits of vertical or horizontal contamination-specific excavation areas. Confirmation samples will be collected at all excavation sidewalls where data are not available at the horizontal boundary of the excavation. The sidewalls will be sampled so that a single soil composite sample will represent a segment of up to 50 linear feet of excavation sidewall. For each depth interval (typically two-foot) within a sidewall segment, six individual aliquots will be collected and composited into a single representative sample. The six grab samples will be collected in a zig zag pattern separated by equal distances. The first sample will be collected approximately one-third of the depth from the top of the interval of interest, with the second sample collected from the middle of the interval, and the third sample collected from approximately two-thirds of the distance from the top of the interval of interest. The same pattern will be repeated for the next three aliquots in the composite soil sample. For excavations that are greater than two feet high, the same sidewall length will be sampled in a similar fashion in two foot depth intervals (or less) as needed

Samples will be collected from all excavation floors where data are not available at the vertical boundary of the excavation. A minimum of one soil composite sample will be collected from each subarea (as needed) and consist of five discrete soil sample aliquots collected from the excavation floor. A 5-point composite sample will be collected from the excavation floors. The soil sample aliquot pattern will be similar to the five dots on the face of a game dice. One composite soil sample will be collected for each 1,200 square feet of excavation floor (an area roughly covering about 35 feet by 35 feet).

3.2 PERFORMANCE STANDARDS

The following is a summary of the 15 general excavation areas identified on Figure 3-1, and the associated performance standards for each excavation area. Excavation nodes for all 15 areas are included on Figure 3-1, and the excavation node coordinates for the designated limits of excavation are listed in Table 3-2. Figures 3-1A, 3-1B, 3-1C, and 3-1D show the excavation nodes for the North, North Central, Central, and Southwest Areas, respectively.

3.2.1 PCB-Soil Excavation/Removal

Soil in the five general PCB-contaminated soil excavation areas (Areas 1, 2, 3, 4, and 5; which are further divided into nine subareas) will generally be excavated separately from other contamination. Table 3-3 presents the different excavation areas and subareas at SWMU 21. The PCB-contaminated soil areas contain variable concentrations of PCBs. There were two isolated locations outside the DRMO fence line where soil PCB concentrations were above 50 parts per million (ppm) within PCB Area 3A and PCB Area 3B; these soil volumes will be managed, excavated, and disposed in accordance with the requirements specified under the Toxic Substances Control Act (TSCA) for materials with PCB concentrations over 50 ppm. Individual samples from PCB Subareas 1A and 1B all had PCB concentrations less than 50 ppm; therefore, PCB Subareas 1A and 1B will be managed in accordance with the soil lead concentration requirements associated with these same soil volumes. PCB Excavation Subareas 2, 3C, 4A, 4B, and 5 also had detected PCB concentrations below 50 ppm; therefore, these soil volumes may be disposed as non-hazardous waste. The Environmental Multiple Award Contract (EMAC) contractor will be responsible for collecting soil samples, as necessary, to characterize soil for treatment, storage, and offsite disposal. Unless otherwise stated for specific excavation areas, direct loading of the trucks from the excavation is the preferred approach. When there is a need for stabilization or treatment of lead in soil, the contractor may elect to create a treatment pile to support that process, in accordance with the requirements of their NAVFAC-approved work plan (described Appendix C). Dewatering of river material from Haynes Branch is anticipated.

The SWMU 21 IMs for the five general PCB areas consist of the following major soil excavation components as shown on Figures 3-2, 3-3, and 3-4:

- **PCB Subareas 1A and 1B**. The samples collected from the PCB Area 1 soil subareas (1A and 1B) each have PCB concentrations that are below 50 ppm (see Figure 3-2); furthermore, these two subareas are the same as the subareas designated as Lead Area 1 soil subareas 1A and 1B (see Figure 3-2A). The detected lead contamination concentrations in Lead Area 1 (subareas 1A and 1B) will dictate the proper management and disposal requirements for these soil volumes; therefore, for planning and estimating purposes, it is assumed that PCB Subareas 1A and 1B will be managed in accordance with the soil lead concentration requirements associated with these soil volumes. The area of soil to be removed from the PCB Subareas 1A and 1B (Lead Subareas 1A and 1B) covers approximately 2,333 square feet (Table 3-3). These discrete soil subareas will have a total excavation depth of 7 feet: the entire berm which was surveyed to have a crest height of 6 feet above grade will be excavated, and the excavation will continue to 1 foot below surface grade. Consequently, the estimated soil volume to be removed from PCB subarea 1A (Lead subarea 1A) is 224 cubic yards (cy), and the estimated soil volume to be removed from the PCB subarea 1B (Lead subarea 1B) is 237 cubic yards. There is no gravel cover present in the northern berm. To avoid double-counting the soil to be excavated from subareas 1A and 1B, only the soil lead volumes are indicated and tabulated in Table 3-3. Confirmation samples will be collected from the excavation floor of PCB subareas 1A and 1B to verify that the cleanup standard for PCBs in soil outside the DRMO fence line (<1 ppm) have been met.

- **PCB Subarea 2**. The soil to be removed from PCB Area 2 in the North Central Area of SWMU 21 is located inside the DRMO fence line, and covers approximately 1361 square feet (Figure 3-3). This soil subarea is designated for excavation to a depth of 4 feet to address two identified “hot spot” soil PCB concentrations (both above 25 ppm, but below 50 ppm) at sample locations 21SB27 and 21SB120. In addition, as part of this IM, confirmation samples will be collected from the excavation walls on the eastern perimeter since the eastern wall does not have samples to the same depth as the contamination being excavated. Confirmation samples are necessary to verify that PCB-contaminated soil with unacceptable exposure risks has been successfully removed from this area. The estimated volume of PCB-contaminated soil to be removed is 202 cy, as presented in Table 3-3.

- **PCB Subareas 3A, 3B, and 3C**. The soil to be removed from PCB subareas 3A, 3B, and 3C in the North Central Area of SWMU 21 is located both inside and outside the DRMO fence line, and collectively covers approximately 8,110 square feet (Figure 3-3). It is presumed that the excavations in PCB Subareas 3A, 3B, and 3C will extend to a depth of 4 feet bgs. The soil excavation for PCB Subarea 3A (1,230 square feet) will be designated as a TSCA area because of the presence of a single "hot spot" where the detected PCB concentration was above 50 ppm (greater than 10^{-4} Excess Cancer Risk) at sample location 21SB165. The total vertical extent of the soil PCB contamination in PCB Subarea 3A is not fully delineated; therefore, a floor sample from the bottom of the excavation will be collected to confirm that PCB-contaminated soil with unacceptable exposure risks has been successfully removed from the floor of the excavation. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 3A is 182 cy, as presented in Table 3-3.

  The soil excavation for PCB Subarea 3B (703 square feet) will be designated as a TSCA area because of the presence of a single "hot spot" where the detected PCB concentration was above 50 ppm at sample location 21SB186. The total vertical extent of the soil PCB contamination in PCB Subarea 3B is not fully delineated; therefore, a floor sample from the bottom of the excavation will be necessary to confirm that PCB-contaminated soil with unacceptable exposure risks has been successfully removed from the floor of the excavation as part of the interim measure. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 3B is 104 cy, as presented in Table 3-3.

  The soil excavation for PCB Subarea 3C (6,177 square feet) is not designated as a TSCA area. The detected soil PCB concentrations inside PCB Subarea 3C are below 50 ppm, although this Subarea borders the TSCA-regulated PCB Subareas 3A and 3B on at least two sides. The minor detection of PCBs at sample location 21SB250 (north of the PCB subarea 3A excavation limit) will be managed with the soil removal action to address Lead Area 4 because the PCB concentrations detected at that location are less than 50 ppm. Confirmation sampling for PCBs and lead will be completed in Lead Area 4. PCB confirmation samples will be collected along the perimeter of PCB Subarea 3C that is contiguous to Lead Area 4 to verify that cleanup standards have been met. The total vertical extent of the soil PCB contamination in PCB Subarea 3C is not fully delineated, especially outside the DRMO fence line; therefore, a floor sample from the bottom of the excavation will be collected to confirm that the PCB cleanup goal has been met on the excavation floor. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 3C is 915 cy, as presented in Table 3-3.

- **PCB Subareas 4A and 4B**. The soil to be removed from PCB subareas 4A (Figure 3-3) and 4B (Figure 3-4) in the North Central Area and the Central Area, respectively, of SWMU 21 is located both inside and outside the DRMO fence line; collectively, these subareas cover approximately 7,253 square feet. The minor low-level PCB detections (<5 ppm) noted within soil between PCB Subareas 4A and 4B will be managed with the soil-lead removal planned to address Lead Area 6 as indicated on Figure 3-1B and Figure 3-1C. The excavations for PCB Subareas 4A and 4B will extend to a depth of 5 feet bgs and 6 feet bgs, respectively. The soil to be excavated from PCB Subarea 4A (1,948 square feet) is classified as non-TSCA because the noted "hot spot" has detected PCB concentrations less than 25 ppm (between 10^{-6} and 10^{-5} Excess Cancer Risk) at multiple sample locations: soil samples 21SB36, 21SB89, 21SB90, 21SB133, 21SB135, and 21SB140; and gravel samples 21GV004 and 21GV005. The total vertical extent of the soil PCB contamination in PCB Subarea 4A appears to be fully delineated. However, there are data gaps along much of the excavation perimeter because only a few soil samples were collected that extended to the 5-foot depth proposed for this excavation. A series of confirmation samples (from the base of the excavation walls) will be collected to verify that PCB-contaminated soil with unacceptable exposure risks has been successfully removed from this area. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 4A is 361 cy, as presented in Table 3-3.

  The soil to be excavated from PCB Subarea 4B (5,305 square feet) is also classified as non-TSCA because the "hot spots" of detected PCBs were less than 25 ppm (between 10^{-6} and 10^{-5} Excess Cancer Risk) at multiple soil sample locations: 21SB108, 21SB109, 21SB145, 21SB146, 21SB148, 21SB149, 21SB262, 21SB263, 21SB264, 21SB300, 21SB301, 21SB303, and 21SB304. The total vertical extent of the soil PCB contamination in PCB Subarea 4B appears to be mostly delineated, with some uncertainty in the vicinity of 21SB264 and 21SB300. PCB Subarea 4B appears to have no significant PCB soil contamination greater than 6 feet bgs, but excavation floor soil PCB confirmation samples must be collected in the vicinity of 21SB264 and 21SB300 because the vertical limit of soil PCB at these locations was not previously established. In addition, there are data gaps along the southwest and southern perimeters of the proposed excavation area; there are also data gaps caused by the limited number of soil samples that extended to the full 6-foot depth proposed for this excavation. A series of confirmation samples (from the base of the excavation walls) will be collected to verify that PCB-contaminated soil with unacceptable exposure risks has been successfully removed from this area. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 4B is 1,179 cy, as presented in Table 3-3.

- **PCB Subarea 5**. The soil to be removed from PCB Area 5 in the Central Area of SWMU 21 is located completely outside the DRMO fence line, and covers approximately 462 square feet (Figure 3-4). This soil subarea is designated for excavation to a depth of 2 feet to address one identified “hot spot” soil PCB concentration (above 1 ppm, but below 25 ppm) at sample location 21SB268. The excavation area for PCB Area 5 is bounded on the north by Lead Area 8, and the perimeter delineation of soil PCBs for PCB Area 5 appears to be adequate to support an excavation to a depth of 2 feet bgs. The estimated volume of PCB-contaminated soil to be removed from PCB Area 5 is 34 cy, as presented in Table 3-3. Another similar PCB detection was identified in the soil within the area proposed for removal as part of Lead Area 8, immediately north and adjacent to PCB Area 5. Confirmation sampling for PCBs will be performed in Lead Area 8 and in PCB Area 5 to confirm that cleanup standards have been met.

The analysis of Haynes Branch sediment samples for PCBs indicated no sediment samples collected from the segment of Haynes Branch adjacent to the SWMU 21 DRMO Storage Lot contained PCB concentrations greater than 1 ppm (Figure 3-6). The 1 ppm PCB concentration was selected as a threshold level in sediment that would protect ecological receptors along Haynes Branch. Consequently, no sediment will be excavated from Haynes Branch to address the low-level (less than 1 ppm) concentrations of PCBs measured in Haynes Brach sediment samples.

3.2.2 Lead-Soil Excavation/Removal

Soil in the eight general lead-contaminated soil excavation areas (Areas 1, 2, 3, 4, 5, 6, 7, and 8; which are further divided into 10 subareas) will generally be excavated separately from other contamination. Table 3-3 presents the different excavation areas and subareas at SWMU 21. The lead-contaminated soil areas contain variable concentrations of lead. There were multiple soil lead detections inside the DRMO fence line above the industrial exposure standard of 800 ppm, and several soil lead detections outside the DRMO fence line above the residential exposure standard of 400 ppm. The soil volumes for subareas with detections above 800 ppm are presumed to require management as hazardous waste, because these lead-contaminated soils are not expected to pass the TCLP test for lead (5 mg/L). All lead-contaminated soil areas will require analysis by TCLP to support the selection of proper management and disposal procedures. For discussion purposes, it was assumed that soil volumes with a limited number of soil lead concentrations below 800 ppm could potentially pass the TCLP test for lead. However, that assumption is based on the past results of lead-contaminated soils from other sites at NSA

Crane. It should be understood the that a soil with a lead concentration of 400 mg/kg or less might still fail the TCLP test for lead if the soil lead was not tightly bound to the soil particles or was somehow more easily leachable than other previously tested soil samples. Soil volumes that fail the TCLP test for lead will either need to be managed, excavated, and disposed in accordance with the hazardous waste requirements specified under RCRA or require physical/chemical stabilization through the addition of chemical additives to modify the characteristics of the soil and reduce lead leachability. As noted in Section 3.2.1, PCB Subareas 1A and 1B (which are the same subareas as those designated as Lead Subareas 1A and 1B) will be managed in accordance with the soil lead concentration requirements associated with these soil volumes.

Lead Excavation Subareas 1B, 2, 3, 4, 5, 6, and 7 all have at least one detected soil lead concentration above 800 ppm; therefore, based on pre-excavation information, those soil volumes may require disposal as hazardous waste. Lead Excavation Subareas 1A and 8 have detected soil lead concentrations below 800 ppm; therefore, based on pre-excavation information, those soil volumes may be disposed as non-hazardous waste. The EMAC contractor will be responsible for collecting soil samples, as necessary, to characterize soil for treatment, storage, and offsite disposal. The EMAC contractor will be responsible for proper management of the lead-contaminated soil from each of the excavation areas. If the lead-contaminated soils are carefully excavated and segregated, then the EMAC contractor could manage, transport, and dispose a portion of the soils with lower lead concentrations as non-hazardous waste; and higher concentration lead-contaminated soil could be managed, transported and disposed as hazardous waste. The EMAC contractor could also choose to stabilize the more lead-contaminated soil while still onsite and prior to transportation, so that it might pass the TCLP test for lead. If verification sampling demonstrates that the treated and stabilized soil passes the TCLP test for lead, then the stabilized lead-contaminated soil could be managed as non-hazardous waste.

The approximate soil volumes to be excavated were determined by multiplying the total excavation area of all lead-contaminated soil [as estimated by geographic information systems (GIS) data], by the average required depth of excavation (in feet) for each subarea. The SWMU 21 IMs for the lead subareas will consist of excavating and removing soil lead with lead concentrations greater than 400 mg/kg in the soil outside the DRMO and immediately adjacent to the DRMO fence line and 800 mg/kg for interior soils of the DRMO, as shown on Figures 3-2A, 3-3A, and 3-4A.

- **Lead Excavation Subareas 1A and 1B**. The area of soil to be removed from the northern berm outside the DRMO fence line (Lead subareas 1A and 1B) covers approximately 2,333 square feet (Figure 3-2A). The height of the earthen berm is approximately 6 feet above the natural grade. It appears that the eastern half of the berm (subarea 1B) is more impacted by lead contamination and metallic debris than subarea 1A. The EMAC contractor may elect to remove larger metallic debris from the excavated soil for recycling or proper disposal of that material separately from the contaminated soil. The proposed approach is to excavate into the natural soil beneath the berm to a depth of 1 foot below grade. Confirmation sampling of the excavation floor for soil lead will be required to verify that the base of the soil lead contamination has been reached. Estimated volumes are 178 cubic yards feet for Lead subarea 1A, and 196 cubic yards for Lead subarea 1B, as presented in Table 3-3.

- **Lead Excavation Subarea 2**. The soil to be removed from Lead subarea 2 in the North Area of SWMU 21 is located both inside and outside the DRMO fence line and covers approximately 4,765 square feet (Figure 3-2A). This soil subarea is designated for excavation to a depth of 4 feet to address five identified “hot spot” soil lead concentrations (all above 400 ppm) at sample locations 21SB30, 21SB237, 21SB238, 21SB240 and 21SB242. As part of this interim measure, confirmation sampling will be conducted on the excavation walls of the northern and southern perimeters to verify that lead-contaminated soil with unacceptable exposure risks has been successfully removed from this excavation subarea. The estimated volume of lead-contaminated soil to be removed is 706 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 3**. The area of soil to be removed from Lead subarea 3 is depicted on the southern portion of Figure 3-2A (the North Area), and also on the northern portion of Figure 3-3A (the North Central Area) of SWMU 21. Lead subarea 3 is located both inside and outside the DRMO fence line, and covers approximately 2,740 square feet. This soil subarea is designated for excavation to a depth of 4 feet to address five identified “hot spot” soil lead concentrations (all above 400 ppm) at sample locations 21SB28, 21SB61, 21SB244, 21SB289 and 21SB290. As part of this interim measure, confirmation sampling will be conducted on the excavation walls of the northern and northwestern perimeters to verify that lead-contaminated soil with unacceptable exposure risks has been successfully removed from this excavation subarea. The estimated volume of lead-contaminated soil to be removed is 406 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 4**. The soil to be removed from Lead subarea 4 is located in the northern portion of the North Central Area (Figure 3-3A). Lead subarea 4 is located both inside and outside the DRMO fence line, and covers approximately 3,523 square feet. This soil subarea is designated for excavation to a depth of 4 feet to address four identified “hot spot” soil lead concentrations (all above 400 ppm) at sample locations 21SB248, 21SB249, 21SB250, and 21SB281. As part of this interim measure, confirmation sampling will be conducted on the excavation walls of the northern, western, and southern perimeters to verify that lead-contaminated soil with unacceptable exposure risks has been successfully removed from this excavation subarea. The estimated volume of lead-contaminated soil to be removed is 522 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 5**. The soil to be removed from Lead subarea 5 is located in the North Central Area (Figure 3-3A) of SWMU 21. Lead subarea 5 is located entirely inside the DRMO fence line, and covers approximately 3,241 square feet. This soil subarea is designated for excavation to a depth of 6 feet to address eight identified "hot spot" soil lead concentrations (all above 800 ppm) at sample locations 21SB21, 21SB66, 21SB68, 21SB69, 21SB259, 21SB260, 21SB295, and 21SB297. As part of this interim measure, confirmation sampling will be conducted on the excavation walls and floor to verify that lead-contaminated soil with unacceptable exposure risks has been successfully removed from this excavation subarea. None of the bounding clean samples along the excavation perimeter match the planned excavation depth for Lead Excavation Subarea 5. Therefore, all excavation walls and the excavation floor for Lead Excavation Subarea 5 require confirmation sampling to verify that a sufficient soil volume has been removed and that the corresponding soil exposure risk reductions are adequate. The estimated volume of lead-contaminated soil to be removed is 720 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 6**. The soil to be removed from Lead subarea 6 is located in the northern portion of the Central Area (Figure 3-4A) of SWMU 21. Lead subarea 6 is located both inside and outside the DRMO fence line, and covers approximately 1,019 square feet. This soil subarea is designated for excavation to a depth of 6 feet to address three identified "hot spot" soil lead concentrations (above 400 ppm) at sample locations 21SB35, 21SB55, and 21SB74. There are no significant gaps in delineating the full extent of soil lead contamination for this excavation subarea. The targeted excavation of the lead-contaminated soil with unacceptable exposure risks from Lead Subarea 6 will eliminate the local exposure risk, and significantly reduce the site-wide exposure risks for SWMU 21. The estimated volume of lead-contaminated soil to be removed is 226 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 7**. The soil to be removed from Lead subarea 7 is located in the northern portion of the Central Area (Figure 3-4A) of SWMU 21. Lead Subarea 7 is located entirely inside the DRMO fence line and covers approximately 1,033 square feet. Lead Subarea 7 is designated for excavation to a depth of 7 feet to address a single identified "hot spot" soil lead concentration (above 800 ppm) at sample location 21SB18. Lead Subarea 7 is relatively well-delineated, and there are no significant gaps regarding the known extent of soil lead contamination. The estimated volume of lead-contaminated soil to be removed is 268 cy, as presented in Table 3-3.

- **Lead Excavation Subarea 8**. The soil to be removed from Lead Subarea 8 is located in the central portion of the Central Area (Figure 3-4A) of SWMU 21. Lead Subarea 8 is located entirely outside the DRMO fence line near Haynes Branch, and covers approximately 487 square feet. The soil lead concentration measured in Lead Area 8 was greater than 400 ppm, but less than 800 ppm. Similar to the soils in the Northern Berm, a decision was made to manage and excavate the soil in this area in accordance with the soil lead concentration requirements, because there is the chance that the lead-contaminated soils could be stabilized and transported offsite as non-hazardous if they are unable to pass the toxicity characteristic leaching procedure (TCLP) test for lead. This soil subarea is designated for excavation to a depth of 2 feet to address the single identified “hot spot” soil lead concentration (above 400 ppm) at sample location 21SB48. As part of this interim measure, confirmation sampling will be conducted on the excavation walls of the northeastern and southeastern perimeters to verify that lead-contaminated soil with unacceptable exposure risk has been successfully removed from this excavation subarea. Also the total vertical extent of the soil lead contamination in Lead Subarea 8 is not fully delineated; therefore, a floor sample from the bottom of the excavation will be collected to confirm that lead-contaminated soil with unacceptable exposure risks have been successfully removed from the floor of the excavation. The estimated volume of lead-contaminated soil to be removed is 36 cy, as presented in Table 3-3. Confirmation sampling for PCBs will also be performed in Lead Area 8 in the vicinity of soil sample 21SB48 to confirm that cleanup standards have been met in this excavation area.

The analysis of Haynes Branch sediment samples for metals indicated high metals concentrations, primarily lead, in distinct segments (Figure 3-6A). Because lead is the primary contaminant and other metals are co-located with lead, removal of contaminated materials with lead concentrations above 400 mg/kg lead also addresses the other co-located metals. Haynes Branch is a rock-filled stream with visible exposures of bedrock. Lead-contaminated stream material consists of fine sediment, sand, and small rocks up to six inches in length. Three distinct stream segments (Northern, Central, and Southern) were identified along Haynes Branch and require material removal. Uncontaminated sediment samples are located both upstream and downstream of the detected lead “hot spots” in the Haynes Branch sediments. As shown on Figure 3-6A, the Northern Lead Sediment stream segment is approximately 290 feet in length with an average width of 27.5 feet, the Central Lead Sediment stream segment is approximately 160 feet in length with an average width of 27.5 feet, and the Southern Lead Sediment stream segment is approximately 150 feet in length with an average width of 27.5 feet. Most sediment samples were collected from the surface of the stream bottom to a depth of 0.5 feet (6 inches). Assuming a total of 600 linear feet of Haynes Branch will be excavated and the river width is approximately 27.5 feet wide, then the total area to be excavated will measure 16,500 square feet. It is further assumed that the lead-contaminated river material in Haynes Branch (when present) will be excavated and removed down to the bedrock surface, producing an estimated material volume of 306 cy.

The IMs to be conducted for the SWMU 21 DRMO Storage Lot also include the limited excavation and removal of three discrete areas of sediment from Haynes Branch contaminated by lead to reduce the exposure risks to human and ecological receptors.

- **Northern Lead Sediment Excavation Area**. This segment of Haynes Branch occurs within the North Central Area of SWMU 21 from upstream sediment location 21SD02 to downstream sediment location 21SD06 and addresses the lead contamination detected in sediment sample 21SD28.

- **Central Lead Sediment Excavation Area**. This segment of Haynes Branch occurs within the Central Area of SWMU 21 from upstream sediment location 21SD29 to downstream sediment location 21SD08 and addresses the high lead contamination detected in sediment samples 21SD03 and 21SD07.

- **Southern Lead Sediment Excavation Area**. This segment of Haynes Branch occurs adjacent to the Southwest Area of SWMU 21 from upstream sediment location 21SD10 to downstream sediment location 21SD11 and addresses the lead contamination detected in sediment sample 21SD04.

The area of lead-contaminated river bed materials from Haynes Branch proposed to be removed by this interim measures removal action at SWMU 21 to address unacceptable exposure risks caused by lead covers 600 linear feet of Haynes Branch, has an estimated volume of 306 cubic yards, and will weigh an estimated 500 tons (following dewatering).

The EMAC contractor will be responsible for collecting soil samples, as necessary, to characterize soil and river material for treatment, storage, and offsite disposal.

3.2.3 PAHs as BaP Equivalents Excavation/Removal

The two SWMU 21 areas where excavations will be conducted to address elevated PAH concentrations (as BaP Equivalents) cover approximately 0.05 acres (2,113 square feet) (Table 3-3). The approximate soil volumes to be excavated were determined by multiplying the total excavation area of the two PAH-contaminated soil subareas (as estimated by GIS data), by the required depth of excavation for each subarea in feet (the vertical soil removal limit for each subarea). The IMs for the two BaP subareas will consist of excavating and removing soil with BaP equivalents concentrations greater than 2.1 ppm, as shown on Figures 3-4B and 3-5.

- **BaP Excavation Subarea 1**. The soil to be removed from BaP Subarea 1 is located in the northwestern portion of the Central Area (Figure 3-4B) of SWMU 21. BaP Subarea 1 is located entirely inside the DRMO fence line in the vicinity of the former old metal baler, and covers approximately 627 square feet. BaP Subarea 1 is designated for excavation to a depth of 6 feet to address a single identified “hot spot” soil BaP equivalent concentration (above 2.1 ppm, or greater than 10^{-4} Excess Cancer Risk) at sample location 21SB38. As part of this interim measure, confirmation sampling will be conducted on the excavation walls of the northwestern and southeastern perimeters to verify that PAH-contaminated soils (expressed as BaP equivalents) with unacceptable exposure risks have been successfully removed from this excavation subarea. The estimated volume of PAH-contaminated soil to be removed is 139 cy, as presented in Table 3-3.

- **BaP Excavation Subarea 2**. The soil to be removed from BaP Subarea 2 is located in the central portion of the Southwest Area (Figure 3-5) of SWMU 21. BaP Subarea 2 is located entirely inside the DRMO fence line near the southwest corner of Building 3249, and covers approximately 1,486 square feet. BaP Area 2 is proposed for excavation to a depth of 8 feet to address two identified “hot spot” soil BaP equivalents concentrations (above 2.1 ppm, or greater than 10^{-4} Excess Cancer Risk) at sample locations 21SB53 and 21SB105. The total vertical extent of the soil lead contamination in BaP Subarea 2 is not completely delineated; therefore, a floor sample from the bottom of the excavation will be collected to confirm that PAH-contaminated soils with unacceptable exposure risks have been successfully removed. Due to a data gap in the delineation sampling, there is also a need for confirmation sampling in the in the northwestern wall of the excavation for BaP Subarea 2.The estimated volume of PAH-contaminated soil to be removed is 440 cy, as presented in Table 3-3.

The EMAC contractor will be responsible for proper management of the BaP-contaminated soil from both of the areas. If the BaP-contaminated soils are carefully excavated and segregated, then the EMAC contractor could manage, transport, and dispose of these soils as non-hazardous waste. The estimated total soil volume targeted for excavation, removal, and off-site disposal from BaP subareas 1 and 2 is approximately 580 cy (Table 3-3).

3.2.4 Summary of Soil and River Material Excavation/Removals by SWMU 21 Area Map

The IMs to be conducted for the various portions of the SWMU 21 DRMO Storage Lot (Northern, North Central, Central and Southwest areas) consist of the excavation and removal of discrete volumes of soil contaminated by PCBs, lead, and PAHs (as BaP equivalents) to reduce the exposure risks to human and ecological receptors. Several soil samples were collected at SWMU 21, sealed in the collection tubes, and sent to a geotechnical laboratory where multiple density measurements were performed on them to provide relevant soil density information for SWMU 21 soils. As presented in Table 3-4, the average density for the SWMU 21 soil samples is 1.63 tons per cubic yard. This average density is used to develop the estimates of tons of soil to be excavated. A summary of the SWMU 21 Interim Measures soil removal action is presented in Table 3-3.

The area of contaminated soil proposed to be removed by this interim measures removal action at SWMU 21 to address unacceptable exposure risks covers almost an acre, has an estimated volume of 7,510 cubic yards, and will weigh 12,241 tons.

3.3 INTERIM MEASURES IMPLEMENTATION REQUIREMENTS

Soil Erosion Control

Soil that accumulates in E&S control devices (see Section 4.0) prior to backfilling of the excavations will be disposed off-site along with the contaminated soil. Following backfilling of the excavation, soil that accumulates in the E&S control devices will be spread across the disturbed ground surface of the excavation.

In the event that the Contractor spills excavated soil on an uncontaminated area, the Contractor will be responsible for removing the contaminated soil along with any impacted surface soil, verifying that all contaminated materials have been removed, and disposing of that material at their expense.

The Contractor will describe the process for transporting excavated soil in the Contractor's Work Plan.

Dewatering

The EMAC Contractor will make every effort to prevent the need to dewater excavated soil, and to prevent the accumulation of water within excavations. Open excavations will be kept to a minimum. It is anticipated that the only material that will require dewatering will be soil that is excavated during a heavy precipitation event [a precipitation event that results in the addition of excess water volume (and weight) to the soil will require excavated soil dewatering prior to transportation for off-site disposal]. Otherwise, there is no anticipated need for soil dewatering. When necessary, the excavated soil will be placed on a dewatering pad at a lift thickness no greater than three feet, and allowed to drain by gravity within the dewatering pad. It is estimated that following the second day of dewatering, the moisture content of the soil will have been sufficiently reduced, and the material will not require the addition of an absorbent agent in order to be made suitable for transportation and disposal. At the conclusion of the field effort, if there is accumulated water at the dewatering pad, then the water will be sampled for characterization to ensure proper management for off-site disposal.

The dewatering of lead-contaminated river bed materials from Haynes Branch is anticipated to generate excess water. As noted in Section 3.1, the materials excavated from the river bed will be placed on a dewatering pad and allowed to dewater by gravity drainage. The liquids from the dewatering process will be directly discharged back to Haynes Branch.

Sampling and Analysis

At the completion of this IM and following removal of the support facilities (e.g., dewatering pad, decontamination pad, and material storage area, etc.), support area verification samples will be collected by Tetra Tech from the surface soil below the decontamination pad and dewatering pad (if this item is installed). If it is determined that the lining system under any of the support facilities failed during implementation of this IM, potentially resulting in the contamination of the soil below the support facilities, the Contractor will be required to remove that contamination at their expense. The EMAC has the option of pre-installation sampling of surface soils.

Disposal

Soil designated for excavation will be sampled by the Contractor for waste disposal characterization purposes in accordance with the waste disposal facility requirements, using the methods required by the NAVFAC-approved waste disposal facility. The Contractor will be responsible for satisfying all disposal requirements of the selected disposal facility. Table 3-3 presents the quantities of soil to be excavated from each subarea.

The Contractor will be responsible for verifying the classification of off-site disposal material (i.e., hazardous waste disposal vs. non-hazardous material disposal) by conducting characterization sampling and analysis, and satisfying the waste disposal facility requirements.

Backfilling

The immediate backfilling following excavation of an individual area of contaminated soil is the preferred method with the excavated area backfilled, compacted, and regraded to the general level of surrounding grades (Figure 1-2). However, immediate backfilling cannot occur where confirmation sampling of excavation wall or floors is required. Consequently, the contractor will be required to protect open excavations from accumulation of precipitation. To prevent contact with soil in excavation areas, and to control the potential for accumulation of precipitation in excavation areas, tarps or plastic sheeting will be employed as temporary barriers (secured with clean fill) to keep contaminated soil from becoming saturated in the excavations. When the laboratory excavation soil sampling data confirms that the contaminants are not at levels of concern in the excavation walls or floor, then the excavation will be authorized for backfilling and restoration.

The backfilling of excavation areas inside the DRMO fence line requires placement of at least 6-inches of gravel at the surface which is underlain by a geotextile fabric to promote drainage and maintain the integrity of the gravel cover on the ground surface. Surface and subsurface soil excavation and impacted areas in level areas will be backfilled to approximate pre-construction conditions using continuous backfilling techniques. There will be no backfill placement required on steep hillside areas with slopes greater than 3:1. The backfill materials obtained from an off-site borrow source will have properties similar to the native SWMU 21 surface/subsurface soil. This soil will be subject to analytical testing by the Contractor to ensure that the material satisfies the following requirements:

- TAL metals (results <IDEM RCGs or Crane background).
- SVOCs (results <IDEM RCGs).
- Sum of benzene, toluene, ethylbenzene, and xylenes, USEPA SW-846 5030 / 8021 - less than 1 ppm.
- Total PCB, USEPA SW-846 8082 - less than 1 ppm.

Additionally, the backfill material shall meet the physical characteristics described below for each of the 15 primary excavation areas. The backfilled areas will be restored to pre-construction conditions using permanent stabilization practices by covering them with gravel, and (where appropriate) vegetation featuring a variety of habitat enhancement plant species.

<u>Surface/Subsurface Soil Excavation Backfill (to within 9-inches below the ground surface elevation)</u> – Backfill soil for the surface/subsurface soil excavation area will be placed in 1-foot thick lifts, and compacted by track-walking across the backfilled area with track-type equipment. When necessary, deeper excavations may be compacted using a clean excavator bucket.

<u>Surface/Subsurface Soil Excavation Topsoil/Gravel (top 9-inches)</u> – The existing surfaces in the surface/subsurface soil excavation areas are covered with either gravel or grass. The top 6 inches of backfill in gravel areas will be American Association of State Highway and Transportation Officials

(AASHTO) No. 7 stone compacted using a smooth drum roller or equivalent which will be underlain with geotextile fabric. The top 9 inches of backfill in vegetated areas will be uncompacted topsoil.

Restoration

The disturbed areas backfilled and regraded as part of the IMWP implementation will be restored and stabilized using permanent stabilization practices. As previously stated, there will be no backfill placement and no restoration required for steep hillside areas with slopes greater than 3:1. Restoration will consist of surface preparation, fertilizing, seeding, and mulching, where appropriate. Procedures for seeding and associated activities (fertilizing and mulching) are presented in detail in Section 4.4.

At each of the excavation areas, the Contractor will identify (prior to excavation) whether the preparation of gravel or vegetation surfaces will be required for restoration, and will perform the appropriate restoration activities as necessary.

Limited stream restoration will be needed for the excavation areas in Haynes Branch because the removal action is focused on the removal of lead-contaminated river material. Rocks and cobbles greater than six inches along an axis will be returned to the streambed following material removals. Sediments and small rocks from clean upstream reaches of the stream will naturally replace the removed river material over time. A stream restoration plan will be prepared by the contractor for the IM restoration activities performed in and around Haynes Branch to meet regulatory requirements.

Erosion and Sediment Control

Before excavation activities begin, E&S controls will be established to prevent impacts to surface water downgradient of the disturbance areas, namely Haynes Branch, Turkey Creek, and Boggs Creek (see Section 4.0). During excavation, backfilling, and restoration operations and until stabilization is achieved (either through placement of biodegradable erosion control matting or vegetation establishment), the E&S controls will be regularly inspected and maintained. IM activities will be conducted in compliance with E&S control requirements such as the Indiana Storm Water Quality Manual (IDEM, 2007).

Decontamination Pad

Temporary decontamination pad(s) will be constructed, as necessary, to clean the equipment used to excavate and transport contaminated soil at various locations. The pads will be sized to accommodate all the equipment to be used at the site, and will be constructed in a manner that will be able to contain all the contaminated material removed from equipment, and the liquids used to clean the equipment.

Contaminated material removed from the equipment will be disposed off-site with the excavated soil. Water from the temporary decontamination pad will be collected for off-site disposal by the EMAC contractor. Additional decontamination pad requirements are discussed in Section 4.5. Care will be taken to keep off-road transport equipment clean to minimize the spread of contaminated soil to areas adjacent to the excavations or other areas within SWMU 21. Any soil removal from these areas, and any associated disposal and restoration costs will be the responsibility of the Contractor.

Dewatering Pad

If required, a temporary dewatering pad will be set up to dewater excavated soil that is exposed to heavy precipitation events. Although the need to dewater any excavated soil is not anticipated, should excavated soil require dewatering prior to off-site disposal, wet soil will be stockpiled on a dewatering pad which will be located within the construction area. The dewatering pads will be sized to accommodate excavated soil and loading equipment, as necessary. The dewatering pad will be constructed in such a manner that will retain all materials while allowing the water to drain by gravity from the soil and be collected in a sump. The water will then be filtered to remove any remaining soil. After the water is filtered, it will be sampled for characterization and staged for eventual off-site disposal. In addition, the dewatering pad will be constructed to allow for the loading of dewatered soil material into trucks for transport to the NSA Crane-approved off-site disposal facility. The direct loading of the trucks from the excavation is the preferred approach, and no stockpiling of contaminated soil (except for those soil volumes when dewatering is required and for lead stabilization) will be authorized.

The volume of water collected through dewatering is not expected to be large, unless soil excavation/removal is performed during periods of heavy precipitation. The EMAC contractor will make every effort to prevent or minimize the excavation of soil requiring dewatering. Excavation activities will cease during heavy rain events, and excavations will be covered with tarps or plastic sheeting (as temporary barriers and anchored with clean fill) to keep contaminated soil from becoming saturated in the excavations and to prevent water contact, thus resulting in the need to sample the water for off-site disposal. If the EMAC contractor fails to show due diligence to prevent or reduce the accumulation of excess water, then the cost of the management and disposal of the water will be borne by the EMAC contractor. Additional dewatering pad requirements are discussed in Section 4.5.

The dewatering of lead-contaminated river bed materials from Haynes Branch is anticipated to generate excess water. As noted in Section 3.1, the materials excavated from the river bed will be placed on a dewatering pad and allowed to dewater by gravity drainage. The liquids from the dewatering process will be directly discharged back to Haynes Branch.

Clearing

Vegetation clearing is only anticipated for areas outside the DRMO fence line. Although extensive vegetation clearing is not envisioned for this activity, it anticipated that there will be a need for limited brush and tree vegetation clearing to support access of earthmoving equipment and field personnel to the PCB and lead excavation areas to the north and east of the DRMO fence line. As indicated in Section 3.1, the riparian vegetation (primarily trees and brush) along the western river bank and floodplains of Haynes Branch will need to be removed. Trees and woody vegetation will be cut to within a foot of the ground surface. The cut vegetation will be placed outside the contamination area. The remaining vegetation within a foot of the ground surface including subsurface root masses and stumps will be handled the same as the soil for the specific subarea where they were encountered.

Vegetation clearing will be kept to a minimum to minimize impacts to natural habitat, and in accordance with the woody vegetation removal limitations described in Section 3.6.2. Cleared vegetation may require chipping, and disposal will be at the direction of the Officer in Charge of Construction (OICC). Standing trees will not be removed from April 1 through September 30 to comply with Indiana bat regulations, as addressed in Section 3.6.2.

3.4 SEQUENCE OF IMWP IMPLEMENTATION

The generalized sequence of construction activities is presented below. This sequence of construction is subject to change based on the Contractor's Work Plan and the Navy's selected construction approach.

1. Hold a pre-IMWP implementation meeting with the NSA Crane OICC, Contracting Officer, IM Contractor, and Tetra Tech representative, at a minimum.

2. Inspect and photograph SWMU 21 to verify existing site conditions, confirm all utility locations, and obtain all required permits.

3. Install perimeter controls per the Erosion and Sediment Control Plan (Section 4.0). Maintain all perimeter controls during excavation and restoration activities.

4. Clear areas for support features including, but not limited to, the decontamination pad, materials storage area, and potential dewatering pad. Construct the support features as needed in work areas.

5. Remove sections of the fence surrounding the DRMO property in order to access contaminated soil and river material excavation areas outside the DRMO fence and to facilitate the excavation of soil contamination along the actual fence structure. During the performance of the soil excavation activities, the contractor will be required to provide a secure temporary fence at the DRMO. Following the completion of soil and river material excavations for the SWMU 21 IM, the contractor will reinstall the DRMO security fence, which will meet the original fence material specifications.

6. Excavate PCB-contaminated soil areas from SWMU 21. The PCB-contaminated soil will be loaded for off-site disposal. Continuous backfilling shall be employed during soil excavation as much as is practical to reduce the amount of open excavations. Load and transport soil to the NSA Crane-approved off-site disposal facility. Following the excavation and removal of PCB-contaminated soil, restore the disturbed areas as required.

7. Excavate the lead-contaminated soil areas from SWMU 21. The lead-contaminated soil will be loaded for off-site disposal. Continuous backfilling shall be employed during soil excavation as much as is practical to reduce the amount of open excavations. Load and transport soil to the NSA Crane-approved off-site disposal facility. Following the excavation and removal of lead-contaminated soil, restore the disturbed areas as required.

8. Excavate the PAH-contaminated soil areas from SWMU 21. The PAH-contaminated soil will be loaded for off-site disposal. Continuous backfilling shall be employed during soil excavation as much as is practical to reduce the amount of open excavations. Load and transport soil to the NSA Crane-approved off-site disposal facility. Following the excavation and removal of PAH-contaminated soil, restore the disturbed areas as required.

9. Excavate the lead-contaminated river material areas from Haynes Branch that are adjacent to SWMU 21. The lead-contaminated river material will require dewatering. Finer sediments may require stabilization prior to loading to support management/disposal as non-hazardous waste. The EMAC is responsible for pre-disposal river material characterization to support identification of proper management/off-site river material disposal requirements. Load and transport river material to the NSA Crane-approved off-site disposal facility

10. Following transportation and disposal of all excavated surface/subsurface soil and river material, remove the dewatering pad, and decontamination pad. Tetra Tech will collect verification samples from within the footprint of the support features. All costs associated with remediation of any contamination found in the support areas will be borne by the EMAC contractor. Following

verification that the ground beneath these support features was not impacted by construction activities, regrade as necessary and establish permanent stabilization.

11. Following permanent stabilization of all disturbed areas, and with the approval of the OICC, remove all remaining perimeter controls, and immediately stabilize all remaining disturbed areas.

3.5 STORM WATER POLLUTION PREVENTION

The SWMU 21 ground surface hydrology, grading, and cover will be restored to pre-IMWP conditions. Pre- and post-development runoff from the limits of disturbance will be the same; therefore, additional storm water detention capacity is not required.

The total disturbed area for construction of the dewatering pad, decontamination pad, materials storage areas, soil excavation/removal areas, and river material removal areas in Haynes Branch will cover more than one acre, so preparation of an IDEM Storm Water General Permit is required for this activity. As currently envisioned, the soil and river material removal areas for this SWMU 21 interim measures activity cover approximately 1.3 acres. Should the EMAC contractor choose to construct haul roads to access excavation areas, then the total area disturbed to construct the haul roads should be included in the calculation of the total area of disturbance. Additionally, IMWP implementation activities require the use of best management practices for E&S control and storm water pollution prevention as described in Section 4.0.

The dredging (removal of river material) in Haynes Branch and the excavation and removal of contaminated soil along the western floodplain of Haynes Branch require the Contractor to develop a Section 401 (of the Clean Water Act) Water Quality Certification with IDEM, as indicated in Table 3-1. The Contractor is also responsible for agency coordination with the U.S. Army Corps of Engineers and preparation of an application for a Section 404 (of the Clean Water Act) permit regarding the excavation/fill activities on the Haynes Branch floodplains and the river material dredging (removal) activities from discrete stream segments of Haynes Branch, as indicated in Table 3-1.

3.6 OTHER IMWP IMPLEMENTATION REQUIREMENTS

3.6.1 <u>Utilities</u>

The Contractor is required to verify all utility locations and adequately protect any utilities located in the active work areas before any earth-disturbing activities begin.

3.6.2 Protection of Natural Resources

Threatened and endangered species or species of special concern protected under Indiana or federal regulations exist or may exist at SWMU 21, and will be protected. Protected bird species that may use SWMU 21 as part of their home range include the bald eagle, osprey, sharp-shinned hawk, red-shouldered hawk, broad-winged hawk, black and white warbler, hooded warbler, and the worm-eating warbler (B&RE, 1997). Also, the Indiana bat, a federally endangered species, is known to forage at NSA Crane. During the spring and summer, Indiana bats roost in trees and forage for insects primarily in riparian and upland forests. The most important characteristic of roost trees is thought to be structural-exfoliating bark with space for bats to roost between the bark and the bole of the tree. To a limited extent, tree cavities and crevices are also used for roosting. Although extensive tree removal is not anticipated, there may be some limited vegetation removal required to access the northernmost and westernmost soil removal areas to address lead and PAH contamination, respectively. When vegetation removals are necessary, the Contractor will comply with the requirements presented here.

In 1997, NSA Crane received a letter from the United States Fish and Wildlife Services (USFWS) stating that, in their opinion, NSA Crane had an abundance of Indiana bat habitat, and that any activity that would result in the clearing of woody vegetation may affect the Indiana bat and would require consultation under the Endangered Species Act (ESA). The USFWS recommended interim guidelines for protecting Indiana bats and their habitat from silvicultural activities, and these recommendations were immediately implemented by NSA Crane under the timber management program.

Because of the Indiana bat and its potential habitat, the cutting of trees at NSA Crane is restricted to certain times during the year. A summary of Indiana bat-related restrictions prepared by the NSA Crane Natural Resources Office (i.e., “bat primer”) is as follows:

- Woody vegetation that is 5 inches in diameter or greater at 4.5 feet above the ground surface may not be removed from April 1 through September 30.

- Standing dead trees may not be removed from April 1 through September 30.

- Timber harvesting may occur after September 30 and before April 1 without a case-by-case consultation, provided the interim guidelines for silvicultural treatment issued to the NSA Crane Natural Resources Office by the USFWS are followed.

- During emergency situations, necessary and prudent tree removal is allowed at all times without consultation. However, the contractor will still need to seek the approval of the NAVFAC Crane Natural Resources Office.

- Brush clearing of woody vegetation less than 3 inches in diameter at 4.5 feet above the ground may occur at any time of the year without consultation.

- All other tree removal or clearing projects not covered above must be submitted to the USFWS via the Crane Natural Resources Office for informal consultation on a case-by-case basis.

3.6.3 Traffic Control Plan

Access to NSA Crane is via four gates: the Main Gate referred to as the Bloomington Gate (Gate House No. 1) in the north; Burns City Gate (Gate House No. 2) in the west; Bedford Gate (Gate House No. 3) in the east; and Crane Gate (Gate House No. 4) in the northwest. NSA Crane will be accessed by the Contractor only through the Crane Gate. All vehicles will pass through the Crane Gate via the traffic routing plan shown on Figure 3-11. The Contractor is not permitted to travel within restricted areas of the facility. All waste hauling vehicles will be weighed upon arrival and at time of departure using the certified weight scale located at the DRMO (Building 2943). The DRMO scale is operated during normal business hours, and weight tickets are available. All waste hauling trucks shall record both empty and loaded weights for each trip.

3.6.4 Contractor Requirements

The Contractor will be required to perform all IMWP implementation activities in accordance with the Contractor's Basic Contract, NSA Crane Contractor's Operations Manual (NSWC Crane, 2002), and supplemental specifications provided in Appendix C.

The IWMP will be implemented by the Contractor, NSA Crane, and Tetra Tech, with work assignments summarized in Table 3-1.

The DRMO Storage Lot (SWMU 21) is an active facility on the NSA Crane installation; therefore, the Contractor must coordinate the planned performance of the IM site activities on a daily basis with the DRMO Area Supervisor to avoid impacting essential DRMO activities, operations, or otherwise compromising DRMO site security. The Contractor is also responsible for the preparation of manifests for government signature to document the disposal of specified soil as hazardous waste soil and other soil as non-hazardous waste soil, as described in the section that follow. The Contractor will perform adequate characterization sampling of contaminated soil to confirm that verify that excavated soil is managed, transported, and disposed in accordance with applicable regulatory requirements. Certain soil volumes containing higher concentrations of lead contamination may be stabilized at the site (prior to loading and transportation) to reduce the potential for lead migration from the soil (as quantified during TCLP testing) and facilitate the management and disposal of those stabilized soil volumes as non-hazardous materials.

3.6.5 Potable Water

Potable water for project personnel and equipment decontamination will be available at B-3245.

3.7 IMPLEMENTATION

The Contractor will coordinate all field work through the OICC. Because the SWMU 21 - DRMO Storage Lot is an active facility on the NSA Crane installation, the Contractor must also coordinate the planned performance of the IM site activities on a daily basis with the DRMO Area Supervisor to avoid impacting essential DRMO activities, operations, or otherwise compromising DRMO site security.

IMWP implementation may be impacted by NSA Crane activities and the facility's "Protective Measures." NSA Crane will implement a corresponding set of "Protective Measures" based on the warnings provided by the Homeland Security Advisory System in the form of graduated "Threat Conditions." The Contractor will be subject to any implemented "Protective Measures."

The Navy will provide a full-time oversight representative during IMWP implementation.

TABLE 3-1

WORK ASSIGNMENT RESPONSIBILITY CHART
INTERIM MEASURES WORK PLAN
SWMU 21 – DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

WORK ITEM	CONTRACTOR	NSA CRANE	Tetra Tech
Pre-IMWP Implementation Meeting	X	X	X
Interim Measure Implementation	X		
Contractor Work Plan (1)	X		
Site Specific Health and Safety Plan / Activity Hazard Analysis	X		
Project Quality Control Plan	X		
Surveying and marking of excavation nodes	X (2)		X
Environmental Conditions Report	(3)		X
Permits			
- Safety & Building Availability Permit (ESO 8020/11)	X		
- Digging Permit (NWSCC 11000/3)	X(4)		
- Flame Tool / Hot Work Permit (NWSCC 11320)	X		
- IDEM Storm Water General Permit	X		
- IDEM - CWA Section 401 Water Quality Certification	X		
- USACE - CWA Section 404 Dredge/Fill (for Haynes Branch to address sediment dredging and floodplain excavation)	X		
Field Work Reports and Submittals (5)	X		
Sampling and Analysis	X(6)		X(7)
Wastewater Disposal (Decontamination Water)	X		
CTO Closure Report	X(8)		X

NOTES:

1. Contractor Work Plan includes, but is not limited to, an excavation and handling plan, waste management plan, environmental protection plan, erosion and sediment control plan, stormwater pollution prevention plan, sampling plan, and transportation and disposal plan.
2. Contractor is responsible to maintain site surveyed markers/stakes for excavation nodes.
3. Contractor will participate in documenting environmental conditions before, during, and after implementation of the interim measures.
4. Contractor is responsible for obtaining all utility clearances.
5. Contractor will furnish items identified in the Basic Contract, NSA Crane Contractor's Operations Manual, and the Supplemental Specifications provided in Appendix C.
6. Contractor will be responsible for the collection of characterization samples required for off-site disposal of excavated surface soils. Contractor will be responsible for collection, storage, characterization, and discharge of wastewater to the NSA Crane approved stabilized drainage channel or storm drain. Contractor will be required to characterize backfill materials.
7. Tetra Tech will be responsible for collection and analysis of soils beneath equipment laydown areas and project support areas after completion of excavations.
8. Contractor will furnish items identified in the Supplemental Specifications provided in Appendix C.

CTO - Contract Task Order
CWA - Clean Water Act
IMWP - Interim Measures Work Plan
NSA - Naval Support Activity
Tetra Tech - Tetra Tech, Inc.

X – Indicates responsible party
NWSCC - Naval Weapons Support Center Crane
ESO - Explosives Safety Office
IDEM - Indiana Department of Environmental Management

TABLE 3-2

EXCAVATION NODES AND COORDINATES FOR IM SOIL EXCAVATIONS AT SWMU 21 - DRMO STORAGE LOT NSA CRANE, CRANE, INDIANA

Excavation Node ID	Soil Sample Location ID	Easting	Northing	SWMU 21 Excavation Subarea
1		3028395.79	1310211.18	SWMU 21- PCB/Lead Area 1A/B
2		3028365.89	1310230.01	SWMU 21- PCB/Lead Area 1A
3		3028356.88	1310232.86	SWMU 21- PCB/Lead Area 1A
4		3028345.93	1310240.33	SWMU 21- PCB/Lead Area 1A
5		3028346.50	1310243.19	SWMU 21- PCB/Lead Area 1A
6		3028349.21	1310244.26	SWMU 21- PCB/Lead Area 1A
7		3028353.29	1310245.94	SWMU 21- PCB/Lead Area 1A
8		3028354.23	1310249.55	SWMU 21- PCB/Lead Area 1A
9		3028355.39	1310253.64	SWMU 21- PCB/Lead Area 1A
10		3028362.79	1310254.47	SWMU 21- PCB/Lead Area 1A
11		3028371.45	1310252.49	SWMU 21- PCB/Lead Area 1A
12		3028381.94	1310244.39	SWMU 21- PCB/Lead Area 1A
13		3028387.05	1310238.47	SWMU 21- PCB/Lead Area 1A
14		3028394.35	1310235.65	SWMU 21- PCB/Lead Area 1A
15		3028404.06	1310234.96	SWMU 21- PCB/Lead Area 1A
16		3028409.05	1310233.05	SWMU 21- PCB/Lead Area 1A/B
17		3028412.90	1310229.45	SWMU 21- PCB/Lead Area 1B
18		3028416.72	1310222.14	SWMU 21- PCB/Lead Area 1B
19		3028421.96	1310216.91	SWMU 21- PCB/Lead Area 1B
20		3028429.85	1310212.19	SWMU 21- PCB/Lead Area 1B
21		3028443.40	1310203.60	SWMU 21- PCB/Lead Area 1B
22		3028449.30	1310193.69	SWMU 21- PCB/Lead Area 1B
23		3028453.46	1310182.94	SWMU 21- PCB/Lead Area 1B
24		3028452.52	1310180.21	SWMU 21- PCB/Lead Area 1B
25		3028448.68	1310179.46	SWMU 21- PCB/Lead Area 1B
26		3028435.48	1310187.50	SWMU 21- PCB/Lead Area 1B
27		3028429.12	1310191.01	SWMU 21- PCB/Lead Area 1B
28		3028420.05	1310198.50	SWMU 21- PCB/Lead Area 1B
29		3028413.29	1310200.73	SWMU 21- PCB/Lead Area 1B
30	21SB85	3028368.90	1309902.98	SWMU 21 - PCB Area 2
31	21SB116	3028377.67	1309885.91	SWMU 21 - PCB Area 2
32	21SB86	3028391.42	1309879.47	SWMU 21 - PCB Area 2
33	21SB251	3028397.69	1309865.26	SWMU 21 - PCB Area 2
34	21SB282	3028378.75	1309851.80	SWMU 21 - PCB Area 2
35	21SB87	3028367.86	1309854.54	SWMU 21 - PCB Area 2
36	21SB88	3028345.59	1309870.53	SWMU 21 - PCB Area 2
37	21SB26	3028453.98	1309841.06	SWMU 21 - PCB Area 3A
38	21SB166	3028507.66	1309815.18	SWMU 21 - PCB Area 3A
39	21SB172	3028496.35	1309789.11	SWMU 21 - PCB Area 3A
40	21SB164	3028469.50	1309804.02	SWMU 21 - PCB Area 3A
41	21SB178	3028471.65	1309773.98	SWMU 21 - PCB Area 3B
42	21SB179	3028497.50	1309775.48	SWMU 21 - PCB Area 3B
43	21SB194	3028514.10	1309751.94	SWMU 21 - PCB Area 3B
44	21SB193	3028498.47	1309751.92	SWMU 21 - PCB Area 3B
45	21SB185	3028472.55	1309758.10	SWMU 21 - PCB Area 3B
46	21SB171	3028467.48	1309788.51	SWMU 21 - PCB Area 3C
47	21SB191	3028460.45	1309742.24	SWMU 21 - PCB Area 3C
48	21SB198	3028462.80	1309728.24	SWMU 21 - PCB Area 3C
49	21SBJ	3028465.89	1309715.46	SWMU 21 - PCB Area 3C

TABLE 3-2

EXCAVATION NODES AND COORDINATES FOR IM SOIL EXCAVATIONS AT SWMU 21 - DRMO STORAGE LOT NSA CRANE, CRANE, INDIANA

Excavation Node ID	Soil Sample Location ID	Easting	Northing	SWMU 21 Excavation Subarea
50	21SB158	3028484.02	1309719.68	SWMU 21 - PCB Area 3C
51	21SB125	3028483.69	1309703.19	SWMU 21 - PCB Area 3C
52	21SB127	3028472.21	1309685.96	SWMU 21 - PCB Area 3C
53	21SB96	3028478.69	1309677.35	SWMU 21 - PCB Area 3C
54	21SB95	3028503.65	1309661.15	SWMU 21 - PCB Area 3C
55	21SB19	3028488.34	1309632.25	SWMU 21 - PCB Area 3C/Lead Area 5
56		3028526.30	1309631.53	SWMU 21 - PCB Area 3C
57		3028515.76	1309811.88	SWMU 21 - PCB Area 3C
58	21SB208	3028493.62	1309594.75	SWMU 21 - PCB Area 4A
59	21SB213	3028509.54	1309580.71	SWMU 21 - PCB Area 4A
60	21SB215	3028510.53	1309563.97	SWMU 21 - PCB Area 4A
61	21SB137	3028512.70	1309556.84	SWMU 21 - PCB Area 4A
62	21SB139	3028527.07	1309539.72	SWMU 21 - PCB Area 4A
62a		3028522.03	1309531.02	SWMU 21 - PCB Area 4A/Lead Area 6
63		3028528.94	1309525.49	SWMU 21 - PCB Area 4A/Lead Area 6
64		3028514.94	1309536.69	SWMU 21 - PCB Area 4A/Lead Area 6
65	21SB77	3028498.19	1309515.19	SWMU 21 - PCB Area 4A
66		3028489.59	1309528.26	SWMU 21 - PCB Area 4A
67	21SB92	3028486.79	1309540.07	SWMU 21 - PCB Area 4A
68	21SB136	3028483.14	1309552.05	SWMU 21 - PCB Area 4A
69	21SB212	3028481.28	1309580.62	SWMU 21 - PCB Area 4A
70		3028550.05	1309504.32	SWMU 21 - PCB Area 4B
71	21SB75	3028536.24	1309503.40	SWMU 21 - PCB Area 4B
72	21SB262	3028528.03	1309499.25	SWMU 21 - PCB Area 4B
73		3028513.48	1309493.13	SWMU 21 - PCB Area 4B/Lead Area 6
74	21SB76	3028520.38	1309480.81	SWMU 21 - PCB Area 4B
75	21SB144	3028521.71	1309454.03	SWMU 21 - PCB Area 4B
76	21SB147	3028513.04	1309437.94	SWMU 21 - PCB Area 4B
77	21SBN	3028512.61	1309412.55	SWMU 21 - PCB Area 4B
78	21SBO	3028522.74	1309372.04	SWMU 21 - PCB Area 4B
79	21SB305	3028566.21	1309398.85	SWMU 21 - PCB Area 4B
80	21SB302	3028563.76	1309413.66	SWMU 21 - PCB Area 4B
81		3028570.92	1309414.39	SWMU 21 - PCB Area 4B
82	21SB81	3028600.64	1309288.04	SWMU 21 - PCB Area 5/Lead Area 8
83	21SB268	3028590.22	1309267.69	SWMU 21 - PCB Area 5/Lead Area 8
84	21SB267	3028569.28	1309283.94	SWMU 21 - PCB Area 5/Lead Area 8
85	21SB307	3028575.15	1309272.66	SWMU 21 - PCB Area 5
86	21SB312	3028569.61	1309258.73	SWMU 21 - PCB Area 5
87	21SB310	3028604.82	1309261.40	SWMU 21 - PCB Area 5
88	21SB306	3028599.57	1309276.59	SWMU 21 - PCB Area 5
89		3028487.67	1310093.71	SWMU 21 - Lead Area 2
90	21SBB	3028476.88	1310093.69	SWMU 21 - Lead Area 2
91	21SBA	3028441.46	1310093.61	SWMU 21 - Lead Area 2
92	21SB56	3028435.67	1310066.09	SWMU 21 - Lead Area 2
93	21SB59	3028422.32	1310037.95	SWMU 21 - Lead Area 2
94	21SB58	3028442.91	1310014.95	SWMU 21 - Lead Area 2
95	21SBC	3028483.02	1310006.74	SWMU 21 - Lead Area 2
96		3028494.81	1310006.58	SWMU 21 - Lead Area 2
97		3028498.03	1309984.55	SWMU 21 - Lead Area 3

TABLE 3-2

EXCAVATION NODES AND COORDINATES FOR IM SOIL EXCAVATIONS AT SWMU 21 - DRMO STORAGE LOT NSA CRANE, CRANE, INDIANA

Excavation Node ID	Soil Sample Location ID	Easting	Northing	SWMU 21 Excavation Subarea
98	21SBD	3028484.89	1309984.55	SWMU 21 - Lead Area 3
99	21SBE	3028466.46	1309968.61	SWMU 21 - Lead Area 3
100	21SB60	3028475.17	1309946.73	SWMU 21 - Lead Area 3
101	21SB63	3028448.53	1309921.47	SWMU 21 - Lead Area 3
102	21SB62	3028480.99	1309902.57	SWMU 21 - Lead Area 3
103	21SB292	3028507.43	1309925.28	SWMU 21 - Lead Area 3
104		3028507.10	1309938.19	SWMU 21 - Lead Area 3
105		3028510.48	1309893.54	SWMU 21 - Lead Area 4
106	21SBF	3028493.43	1309893.55	SWMU 21 - Lead Area 4
107	21SBG	3028460.02	1309878.02	SWMU 21 - Lead Area 4
108	21SB293	3028434.72	1309689.64	SWMU 21 - Lead Area 5
109	21SB257	3028419.88	1309681.20	SWMU 21 - Lead Area 5
110	21SB258	3028408.65	1309657.76	SWMU 21 - Lead Area 5
111	21SB66A	3028428.74	1309641.66	SWMU 21 - Lead Area 5
112	21SB71	3028439.93	1309628.13	SWMU 21 - Lead Area 5
113	21SB70	3028460.81	1309604.67	SWMU 21 - Lead Area 5
114	21SB299	3028474.70	1309619.98	SWMU 21 - Lead Area 5
115	21SB298	3028485.24	1309645.66	SWMU 21 - Lead Area 5
116	21SBK	3028463.39	1309670.80	SWMU 21 - Lead Area 5
117	21SB68A	3028437.61	1309670.96	SWMU 21 - Lead Area 5
118	21SB73	3028540.27	1309521.51	SWMU 21 - Lead Area 6
119	21SB34	3028504.00	1309501.00	SWMU 21 - Lead Area 6
120	21SB261	3028529.53	1309515.15	SWMU 21 - Lead Area 6
121	21SB78	3028452.24	1309485.50	SWMU 21 - Lead Area 7
122	21SBW	3028426.78	1309483.00	SWMU 21 - Lead Area 7/BaP Area 1
123	21SB39	3028412.00	1309467.00	SWMU 21 - Lead Area 7
124	21SB80	3028434.22	1309451.49	SWMU 21 - Lead Area 7
125	21SB318	3028446.70	1309457.09	SWMU 21 - Lead Area 7
126	21SB317	3028461.67	1309472.17	SWMU 21 - Lead Area 7
127	21SBL	3028488.73	1309455.28	SWMU 21 - Not Used
128	21SB79B	3028491.35	1309415.29	SWMU 21 - Not Used
129	21SBM	3028447.59	1309424.90	SWMU 21 - Not Used
130	21SB266	3028582.10	1309297.69	SWMU 21 - Lead Area 8
131	21SB270	3028441.90	1309507.19	SWMU 21 - BaP Area 1
132	21SBW	3028416.03	1309509.32	SWMU 21 - BaP Area 1
133	21SB272	3028413.78	1309024.16	SWMU 21 - BaP Area 2
134	21SB276	3028434.81	1309012.15	SWMU 21 - BaP Area 2
135	21SB277	3028412.53	1308977.34	SWMU 21 - BaP Area 2
136	21SB278	3028385.24	1308984.80	SWMU 21 - BaP Area 2
137	21SB274	3028370.71	1308988.61	SWMU 21 - BaP Area 2

Shaded cells indicate excavation nodes that do not correspond to previous sample points

TABLE 3-3

PROPOSED IM SOIL REMOVAL AREAS TO MITIGATE SOIL CONTAMINATION RISKS
SWMU 21 - DRMO STORAGE LOT
NSA CRANE, CRANE, INDIANA

Subarea Designation	Excavation Phase (IA, IB, or II) & Subarea No.	Figure #	Area (square feet)	Acres	Avg. Gravel Depth (ft.)	Depth of Contam. (ft.)	Estimated Volume for Excavation (ft^3)	Estimated Volume for Excavation (yd^3)	Comments
PCB Area 1A	IA - 1	3-2	**	**	**	**	**	**	Entire 6 ft. berm to be removed to -1 ft. below grade
PCB Area 1B	IA - 1	3-2	**	**	**	**	**	**	Entire 6 ft. berm to be removed to -1 ft. below grade
Lead Area 1A	IA - 1	3-2A	1,228	0.04	0	7	4,808	178	Entire 6 ft. berm to be removed to -1 ft. below grade - berm volume is calculated. Material in Lead Area 1A ***is not significantly*** lead contaminated.
Lead Area 1B	IA - 1	3-2A	1,105	0.03	0	7	5,286	196	Entire 6 ft. berm to be removed to -1 ft. below grade - berm volume is calculated. Three samples with >800 ppm Lead (may fail TCLP for lead)
Lead Area 2	IA- 2	3-2A	4,765	0.11	1	4	19,058	706	Wall confirmation samples required on north (A & B) & south (C) to verify conditions at excavation boundary. Five samples >800 ppm Lead (may fail TCLP)
Lead Area 3	IA - 3	3-2A/3-3A	2,740	0.06	1	4	10,959	406	Wall confirmation samples required on north (D) & northwest (E) to verify conditions at excavation boundary. Three samples >800 ppm Lead
Lead Area 4	IA - 4	3-3A	3,523	0.05	1	4	14,092	522	Wall confirmation samples required on north (F), west (G) & south (H) to verify conditions at excavation boundary. One sample >800 ppm Lead
PCB Area 3A	IA - 5	3-3	1,230	0.02	1	4	4,920	182	Wall confirmation samples required on west (I) to verify conditions at excavation boundary. Excavation soil sample >50 ppm PCBs (TSCA Waste). Soil PCB not vertically bounded in PCB Area 3A interior (deepest soil sample contaminated).
PCB Area 3C	IB - 1	3-3	6,177	0.16	1	4	24,708	915	Wall confirmation samples required on north (H) and west central (J) perimeter to verify conditions at excavation boundary. Excavation area contains soil samples <50 ppm PCBs (non-TSCA). Soil PCB not completely bounded vertically in PCB Area 3C (several deepest soil samples contaminated).
PCB Area 3B	IB - 2	3-3	703	0.02	1	4	2,811	104	Excavation contains one soil sample >50 ppm PCBs (TSCA Waste). PCB not vertically bounded in PCB Area 3B (deepest soil sample contaminated).
PCB Area 4A	IB - 3	3-3	1,948	0.05	2	5	9,740	361	Excavation area contains soil samples <25 ppm PCBs (non-TSCA). Northern and eastern perimeters will require confirmation sampling at depth to verify PCB contamination exposure risks have been adequately reduced.
Lead Area 6	IB - 4	3-3A/3-4A	1,019	0.02	2	6	6,111	226	Two samples >800 ppm Lead
PCB Area 4B	IB - 5	3-4	5,305	0.13	1	6	31,830	1,179	Wall confirmation samples required on southwest (N) and south (O) to verify conditions at excavation boundary. Excavation area contains soil samples <25 ppm PCBs (non-TSCA)
Lead Area 8	IB - 6	3-4A	487	0.01	0	2	974	36	Proposed excavation area entirely outside DRMO fenceline and adjacent to PCB Area 5. Will address co-located PCB soil contamination (< 25ppm) outside the fenceline adjacent to the creek. Confirmation sampling needed on northeastern and southeastern perimeters.
PCB Area 5	IB - 7	3-4	462	0.02	0	2	924	34	Proposed excavation area outside DRMO fenceline and adjacent to Lead Area 8. Excavation area contains soil samples <25 ppm PCBs (non-TSCA).
(Phase I Soil Total) =			30,691	0.72			136,222	5,045	**Phase I also includes the river material removal (Phase IB-8) from segments of Haynes Branch to address detected lead contamination in the stream bed.**
PCB Area 2	II - 1	3-3	1,361	0.03	1	4	5,444	202	Proposed excavation area entirely inside DRMO fenceline. Excavation area contains soil samples <50 ppm PCBs (non-TSCA). Eastern perimeter will require confirmation sampling at depth to verify PCB contamination exposure risks have been adequately reduced.
Lead Area 5	II - 2	3-3A	3,241	0.07	2	6	19,446	720	Wall confirmation samples required on northeast (K) to verify conditions at excavation boundary. Proposed excavation area entirely inside DRMO fenceline (area slightly increased due to recent data update). Multiple soil samples contain >800 ppm Lead (likely to fail TCLP)
BaP Area 1	II - 3	3-4B	627	0.01	3	6	3,762	139	Wall confirmation samples required on northwest (W) to verify conditions at excavation boundary. Proposed excavation area inside DRMO fenceline/adjacent to Lead area 7A and nearly 50 percent of BaP Area 1 is beneath a concrete pad. Confirmation sampling needed for northwestern/southeastern perimeters.
Lead Area 7	II - 4	3-4A	1,033	0.02	3	7	7,231	268	Proposed excavation area inside DRMO fenceline and adjacent to BaP Area 1. Soil contamination >800 ppm Lead (likely to fail TCLP)
BaP Area 2	II - 5	3-5	1,486	0.03	2	8	11,888	440	BaP Area 2 immediately southwest of Building 3249. Vertical extent not delineated-Floor sample needed to confirm BaP removal/risk reduction attained.
(Phase II Total) =			7,748	0.17			47,771	1,769	
Haynes Branch Sed.	IB - 8	3-6A	16,500	0.38	N/A	1	8,250	306	Lead contamination at 4 sediment locations in excess of human health risk levels to be removed: 600 stream feet, avg. stream width = 27.5 feet.
(IM Soil/Sed. Total) =			54,939	1.27			192,243	7,120	Average Soil Density for SWMU 21 = 1.63 tons per cubic yard (see Table 3-4). 7,120 cubic yards X 1.63 tons per cubic yard = 11,606 tons.

**Lead Areas 1A and 1B and PCB Areas 1A and 1B are the same northern earthen berm and PCB levels are < 50ppm. Soil management/disposal likely is nonhazardous for Lead/PCB Area 1A.
Soil management/disposal likely is hazardous for lead in Lead/PCB Area 1B. **Known or suspected hazardous waste soil subareas are indicated in bold red font.**

TABLE 3-4

SOIL DENSITY DATA FROM SOIL BORINGS AT SWMU 21
NSA CRANE, CRANE, INDIANA

Sample Location	Sample Depth Interval (ft. bgs)	Soil Sample Description	Unit Wet Weight (lbs./ft^3)	Calculated Wet Weight per Ton (Tons/yd^3)	Averaged Weight/Ton by Sample Location (Tons/yd^3)
21SB232	1.9 - 2.2	brown clay	128.9	1.74	1.62
	2.6 - 2.9	brown sand with rock fragments	110.8	1.50	
	5.2 - 5.6	brown clayey sand with rock fragments	119.2	1.61	
	8.3 - 8.7	light brown silty sand	121.3	1.64	
21SB251	1.0 - 1.4	brown sand, trace of clay, some rock fragments	113.5	1.53	1.56
	2.2 - 2.6	brown clayey sand	118.3	1.60	
21SB260	4.4 - 4.8	brown clayey sand, some rock fragments	137.7	1.86	1.86
21SB297	2.2 - 2.6	light brown sand with rock fragments	124.3	1.68	1.73
	3.0 - 3.3	black clayey sand, trace of coal	125.5	1.69	
	4.4 - 4.8	brown clayey sand with rock fragments	134.3	1.81	
21SB303	1.2 - 1.5	gray sandy clay with rock fragments	101	1.36	1.55
	2.4 - 2.8	reddish brown clayey sand with rock fragments	129.1	1.74	
Gravel Pile	1.7 - 2.1	brown sandy clay with rock fragments	109.6	1.48	1.48
General Average Weight for Sampled Soil Borings (SWMU 21) in Tons/Cubic Yard =					1.63

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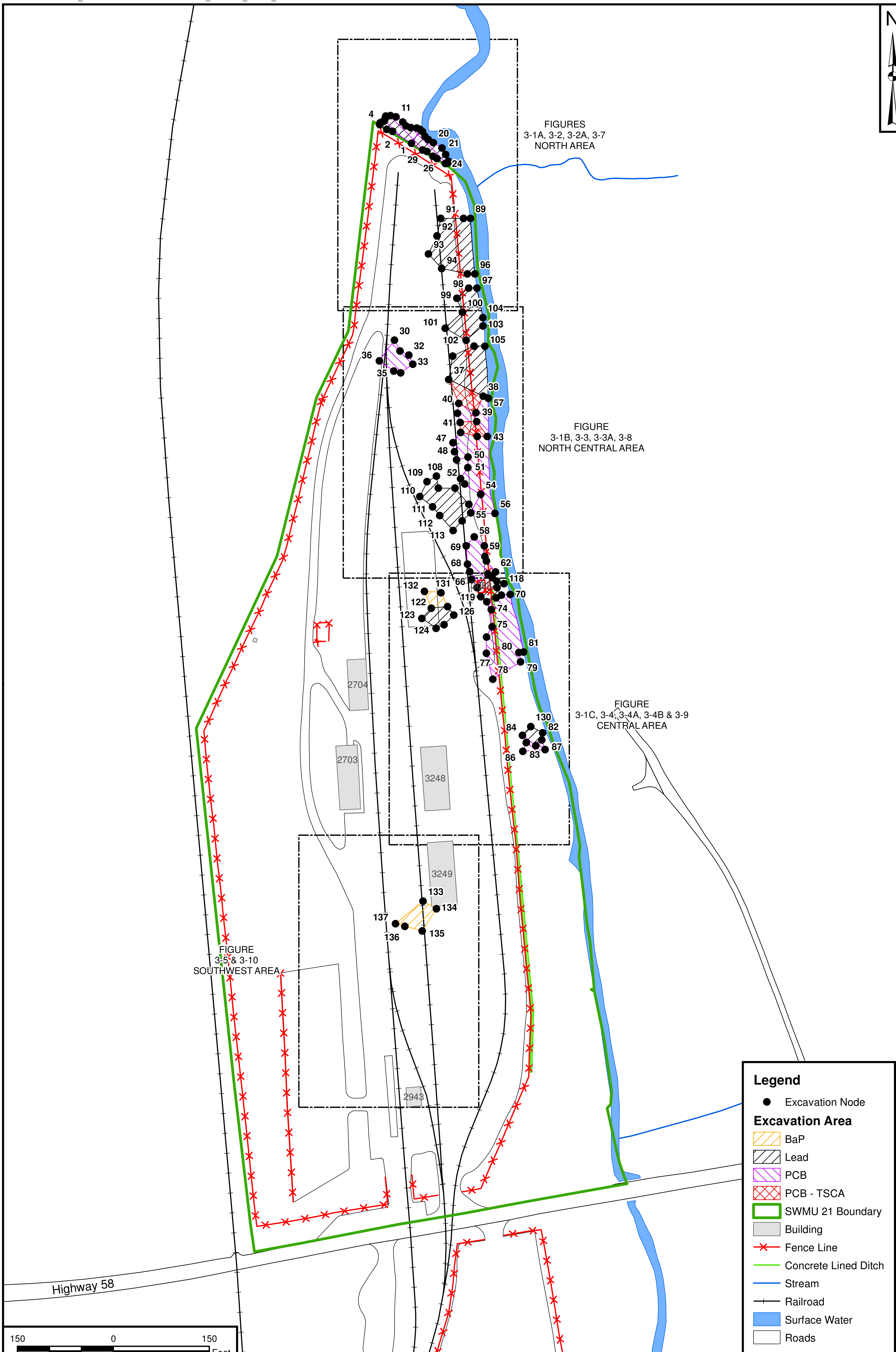

DRAWN BY	DATE			CONTRACT NUMBER	CTO NUMBER
J. NOVAK	08/26/14		FIGURE INDEX MAP	6018	F272
CHECKED BY	DATE		PROPOSED EXCAVATION NODES	APPROVED BY	DATE
R. BARRINGER	08/26/14		SWMU 21 - DRMO STORAGE LOT		
REVISED BY	DATE		NSA CRANE	APPROVED BY	DATE
S. PAXTON	08/26/14		CRANE, INDIANA		
SCALE				FIGURE NO.	REV
AS NOTED		NAVFAC		3-1	0

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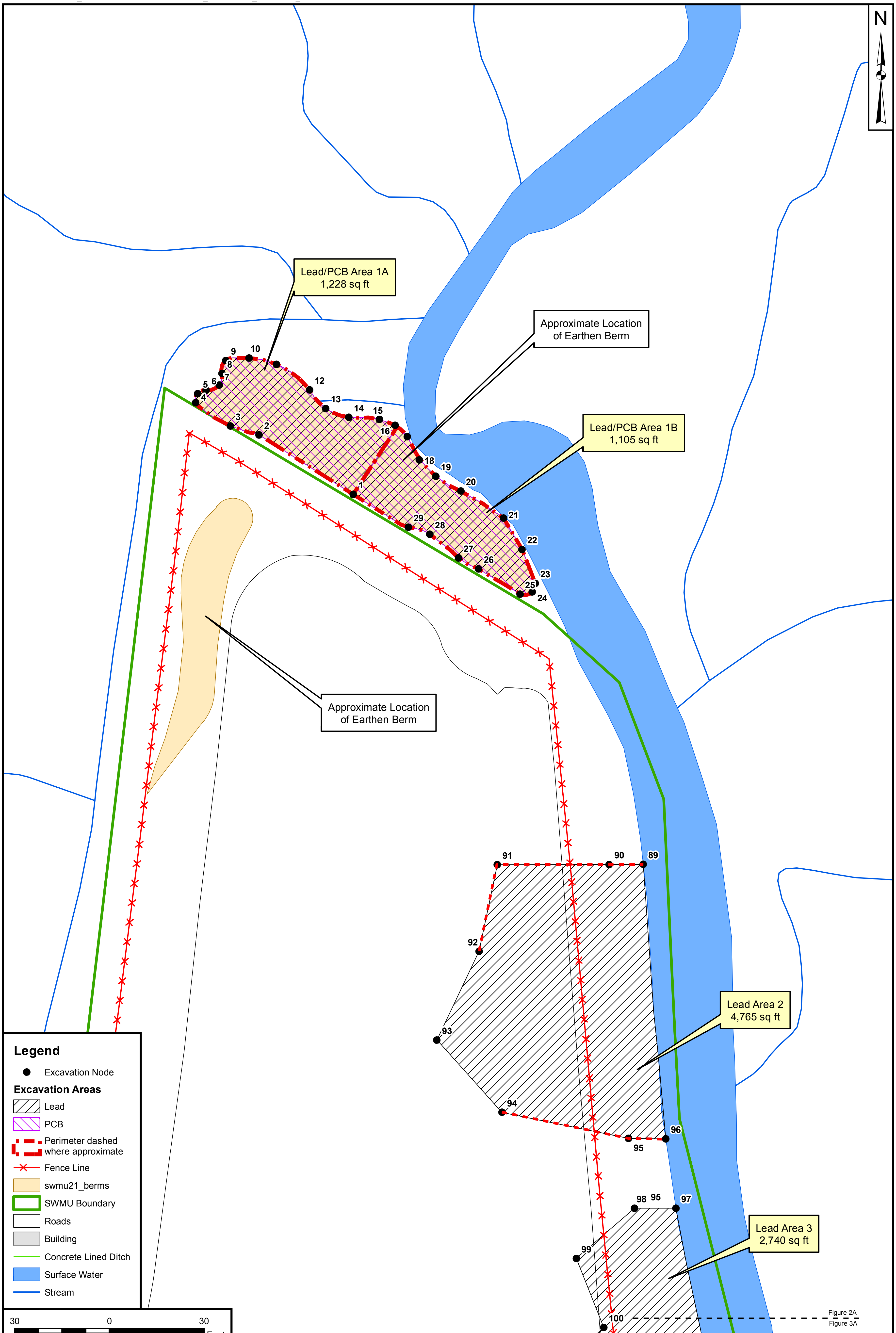
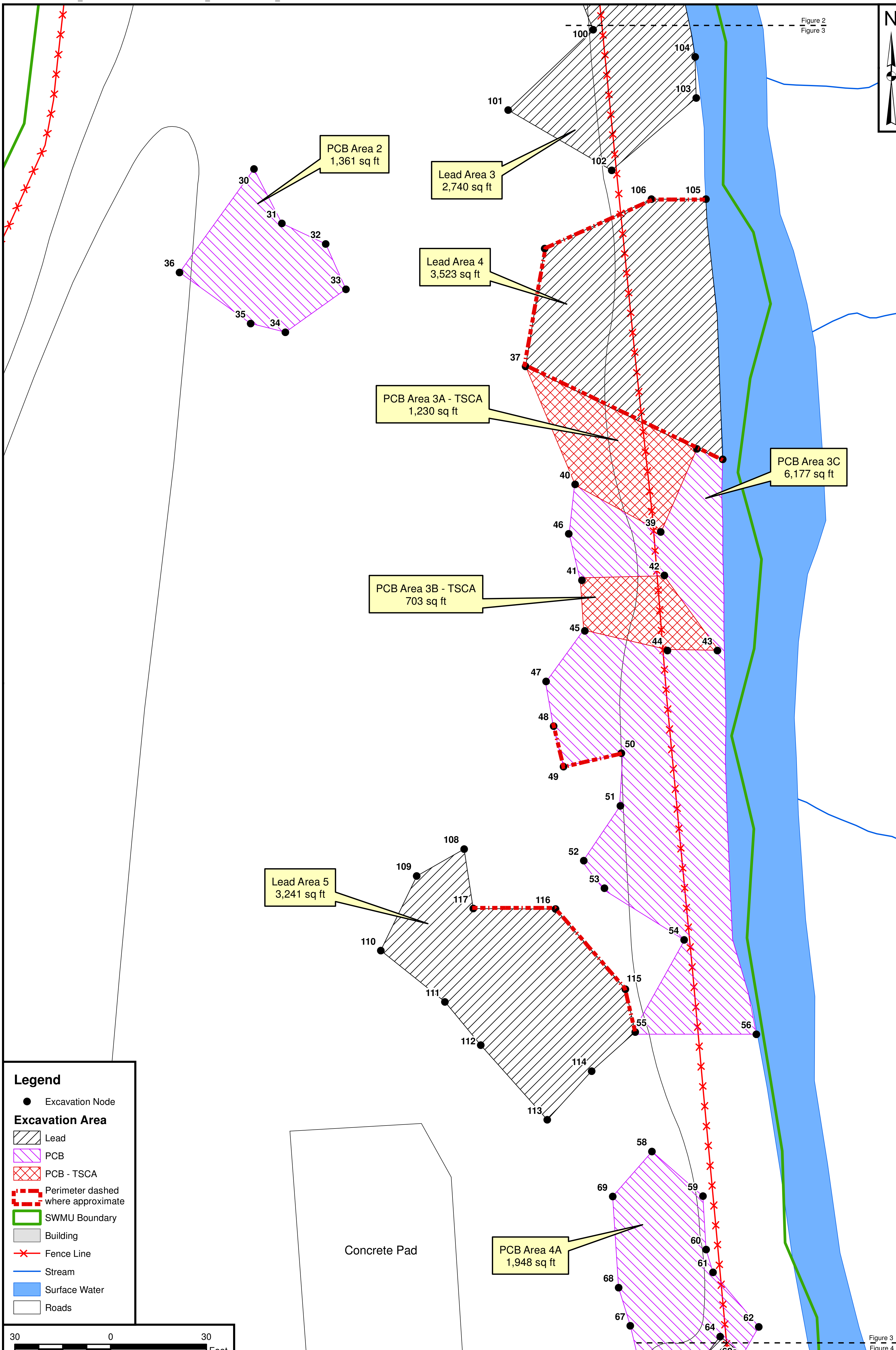
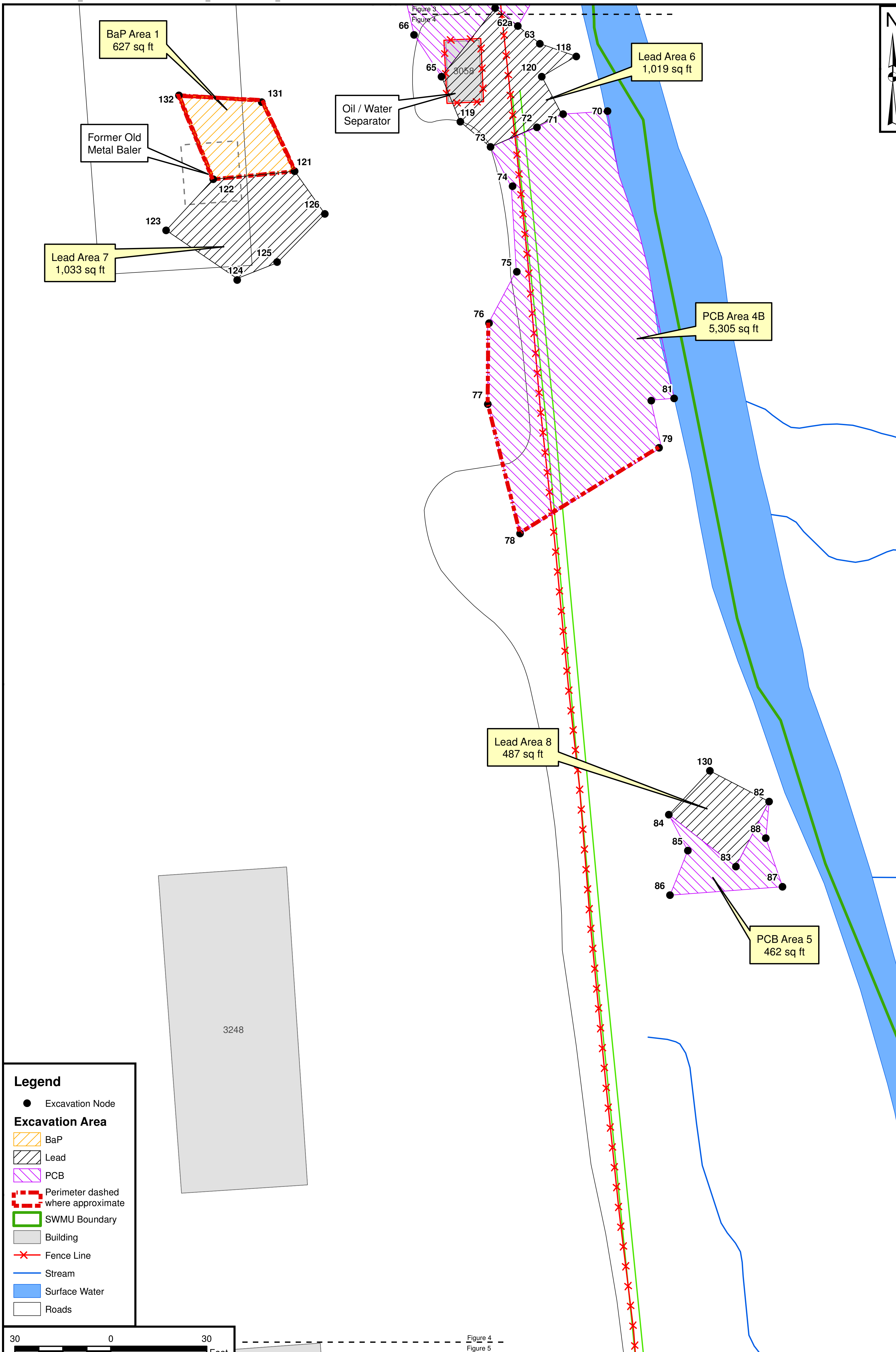


DRAWN BY	DATE		NORTH AREA	CONTRACT NUMBER	CTO NUMBER
J. NOVAK	6/20/14	NAVFAC	EXCAVATION NODES	6018	F272
CHECKED BY	DATE		SWMU 21 - DRMO STORAGE LOT	APPROVED BY	DATE
R. BARRINGER	06/20/14		NSA CRANE	APPROVED BY	DATE
REVISED BY	DATE		CRANE, INDIANA	FIGURE NO.	REV
J. NOVAK	06/20/14			3-1A	0
SCALE					
AS NOTED					

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_NORTHCENTRAL_EXCNODE.MXD 07/09/14 SP



DRAWN BY J. ENGLISH	DATE 12/05/12	NORTH CENTRAL AREA EXCAVATION NODES SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018 / CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 07/09/14		APPROVED BY / DATE
REVISED BY S. PAXTON	DATE 07/09/14		APPROVED BY / DATE
SCALE AS NOTED			FIGURE NO. 3-1B / REV 0



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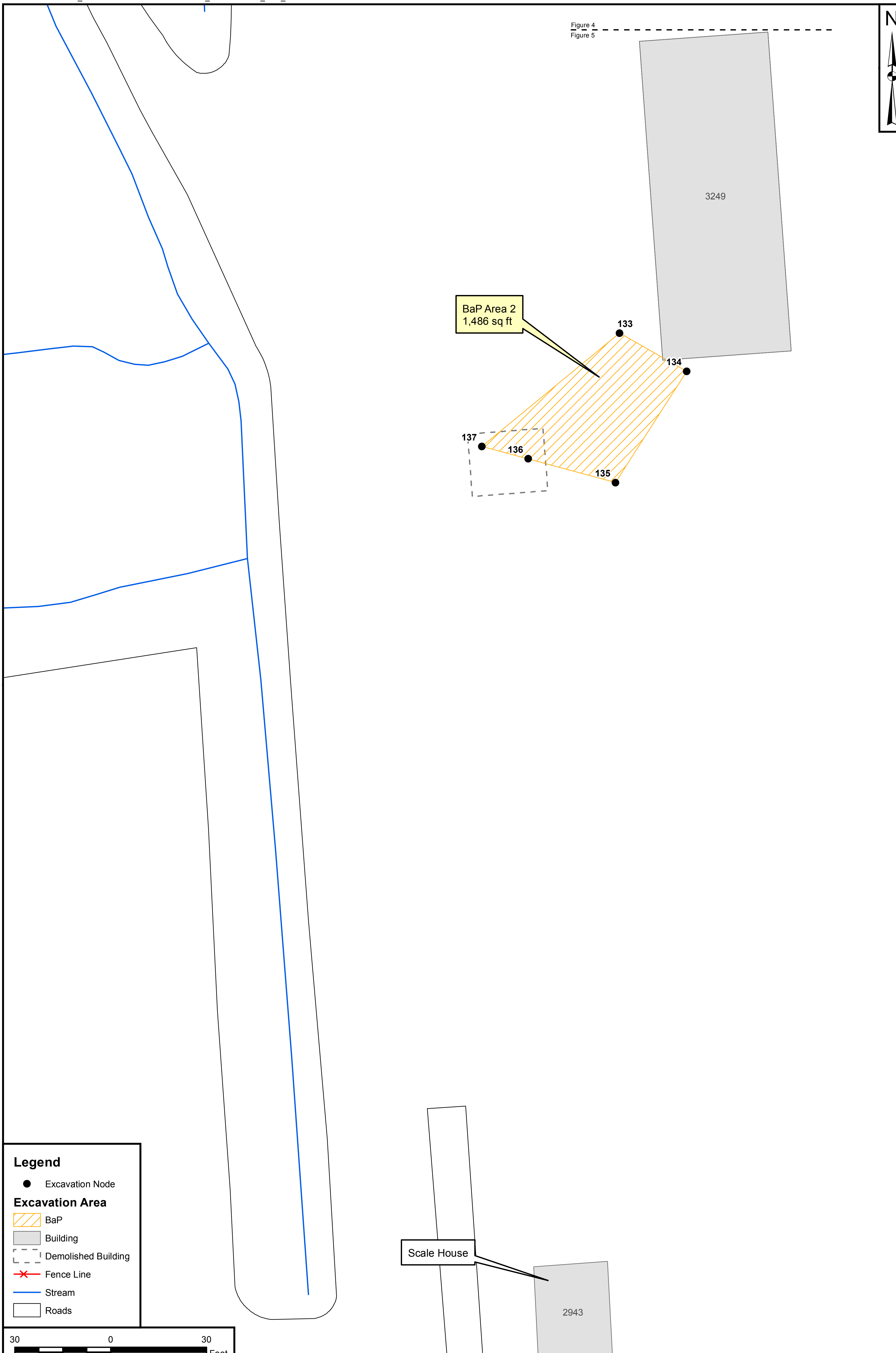
J. ENGLISH	12/05/12
CHECKED BY	DATE
R. BARRINGER	07/09/14
REVISED BY	DATE
S. PAXTON	07/09/14
SCALE	
AS NOTED	

NAVFAC

CENTRAL AREA
EXCAVATION NODES
AND PROPOSED SEDIMENT LOCATION
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-1C	REV 0

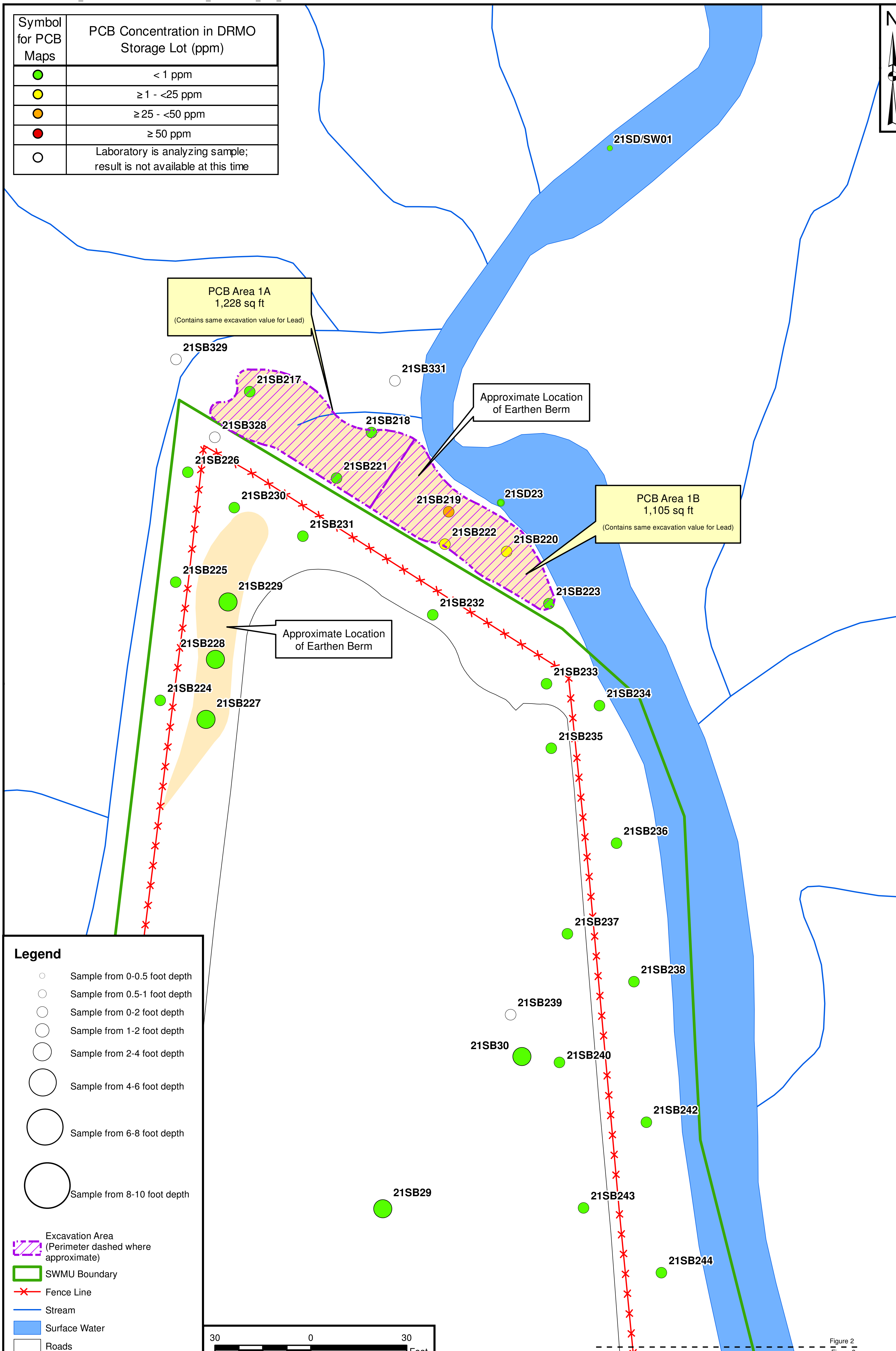
PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SOUTHWEST_BAP_EXCNODE.MXD 06/06/14 JN



DRAWN BY: J. ENGLISH	DATE: 12/06/12	SOUTHWEST AREA BaP EXCAVATION NODES SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER: 6018	CTO NUMBER: F272
CHECKED BY: R. BARRINGER	DATE: 06/06/14		APPROVED BY:	DATE:
REVISED BY: J. NOVAK	DATE: 06/06/14		APPROVED BY:	DATE:
SCALE: AS NOTED			FIGURE NO. 3-1D	REV: 0

NAVFAC

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_NORTHERN_PCB_EXC.MXD 07/09/14 SP



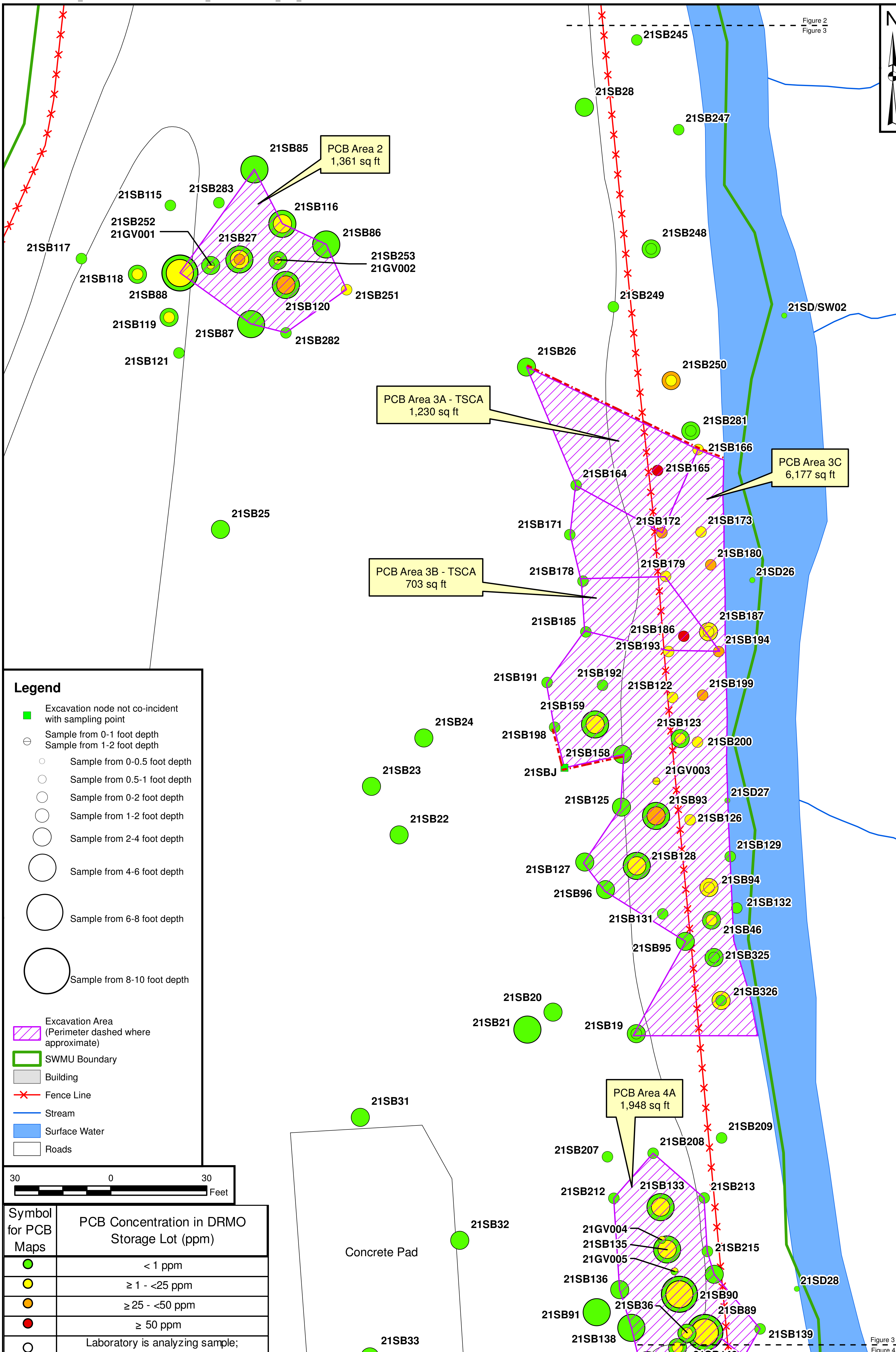
DRAWN BY	DATE
J. ENGLISH	12/04/12
CHECKED BY	DATE
R. BARRINGER	07/09/14
REVISED BY	DATE
S. PAXTON	07/09/14
SCALE	
AS NOTED	

NAVFAC

NORTH AREA
PCB EXCAVATION AREAS
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-2	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_NORTHCENTRAL_PCB_EXC.MXD 07/09/14 SP



Symbol for PCB Maps	PCB Concentration in DRMO Storage Lot (ppm)
● (green)	< 1 ppm
● (yellow)	≥ 1 - <25 ppm
● (orange)	≥ 25 - <50 ppm
● (red)	≥ 50 ppm
○	Laboratory is analyzing sample; result is not available at this time

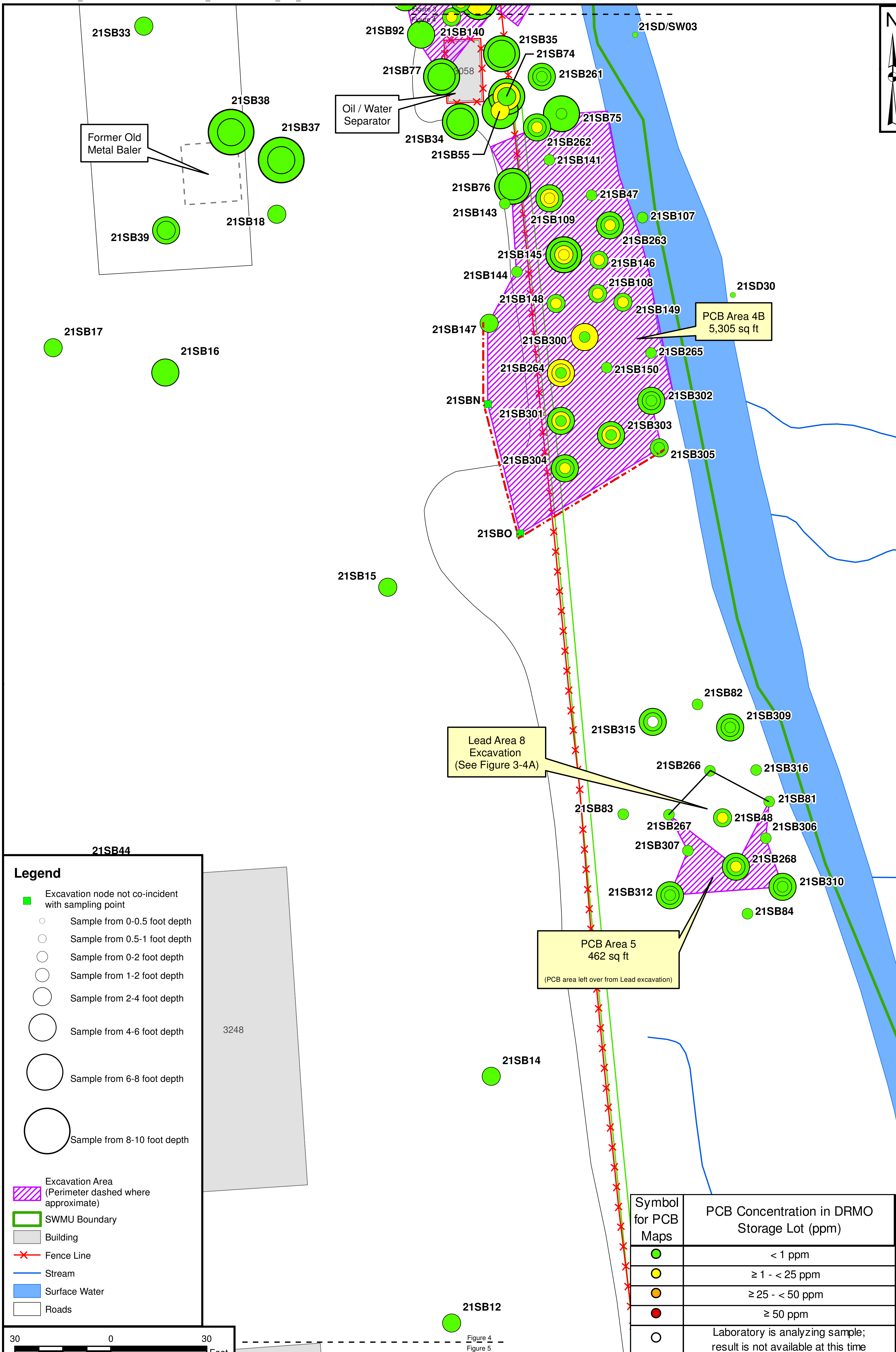
DRAWN BY	DATE
J. ENGLISH	12/05/12
CHECKED BY	DATE
R. BARRINGER	07/09/14
REVISED BY	DATE
S. PAXTON	07/09/14
SCALE	
AS NOTED	

NAVFAC

NORTH CENTRAL AREA
PCB EXCAVATION AREAS
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-3	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SOUTHCENTRAL_PCB_EXC.MXD 07/09/14 SP



DRAWN BY J. ENGLISH	DATE 12/05/12	CENTRAL AREA PCB EXCAVATION AREAS AND PROPOSED SEDIMENT LOCATION SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 07/09/14		APPROVED BY	DATE
REVISED BY S. PAXTON	DATE 07/09/14		APPROVED BY	DATE
SCALE AS NOTED			FIGURE NO. 3-4	REV 0

NAVFAC

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_NORTHERN_LEAD_EXC_REV.MXD 07/09/14 SP

Symbol for Lead Maps	Lead Concentration in DRMO Storage Lot (ppm)
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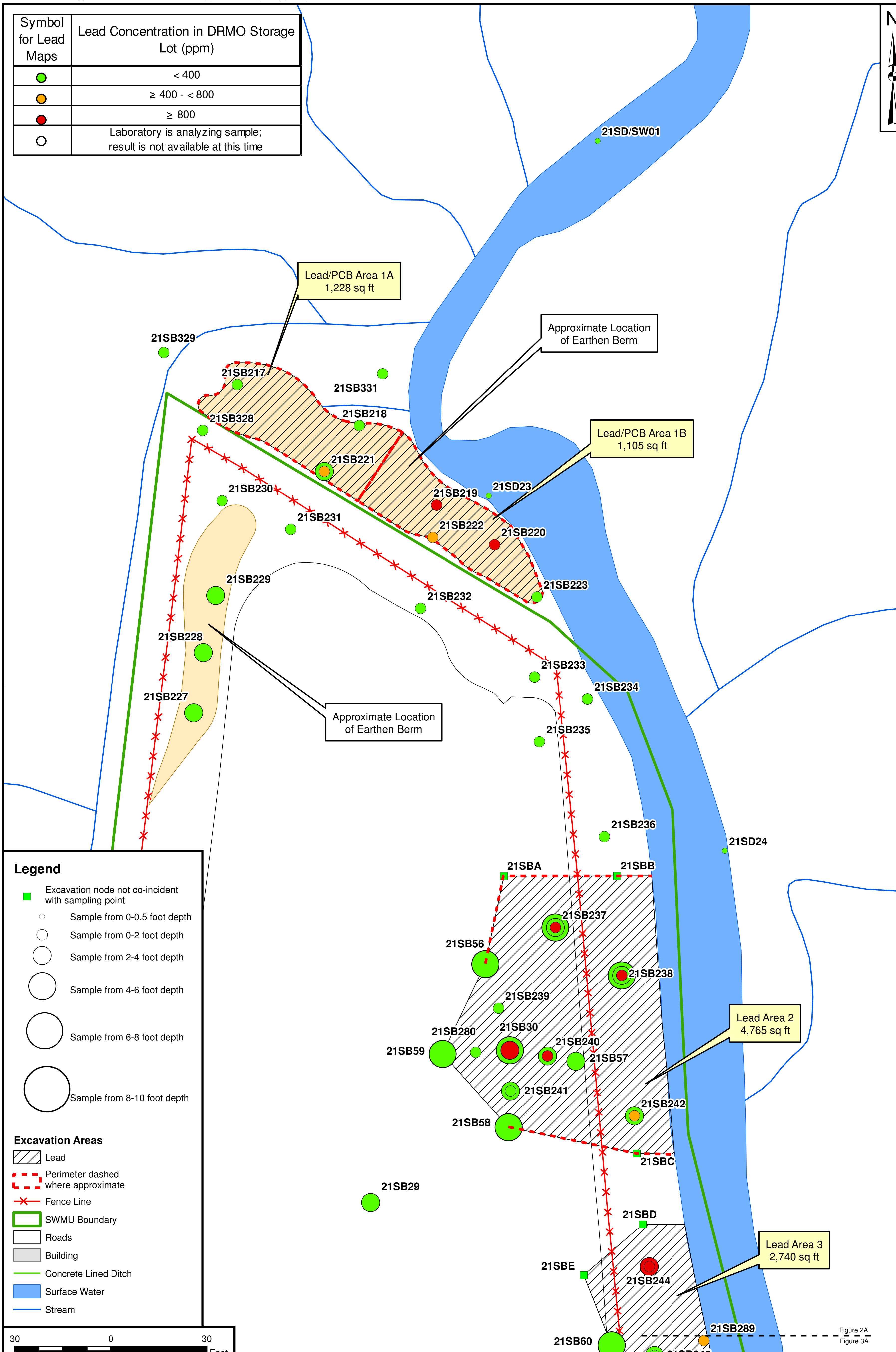
(orange)	≥ 400 - < 800
(red)	≥ 800
(open)	Laboratory is analyzing sample; result is not available at this time



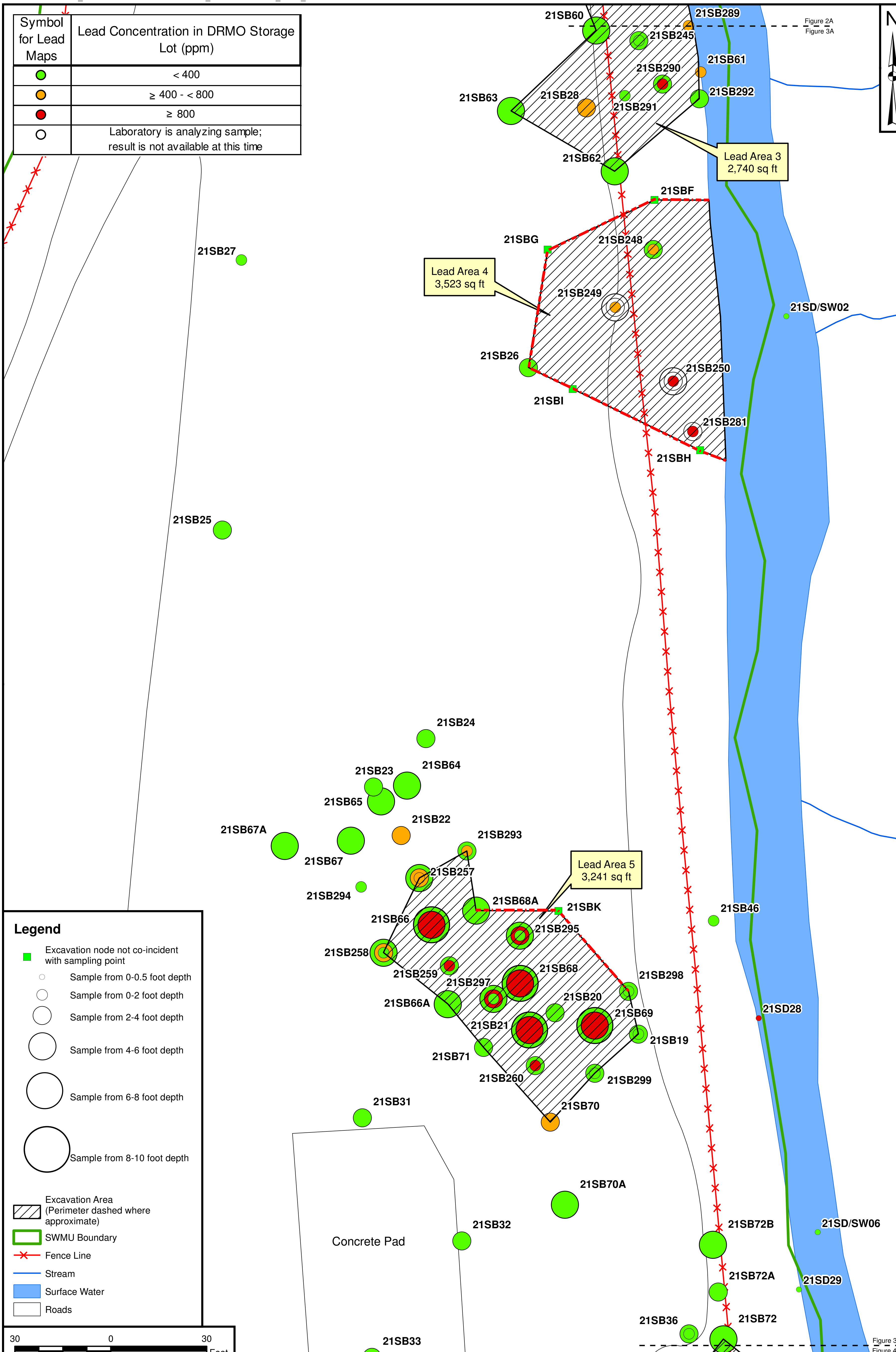
DRAWN BY	DATE
J. NOVAK	6/20/14
CHECKED BY	DATE
R. BARRINGER	07/09/14
REVISED BY	DATE
S. PAXTON	07/09/14
SCALE	
AS NOTED	

NAVFAC

NORTH AREA
EXCAVATION NODES
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
__	__
APPROVED BY	DATE
__	__
FIGURE NO. 3-2A	REV 0

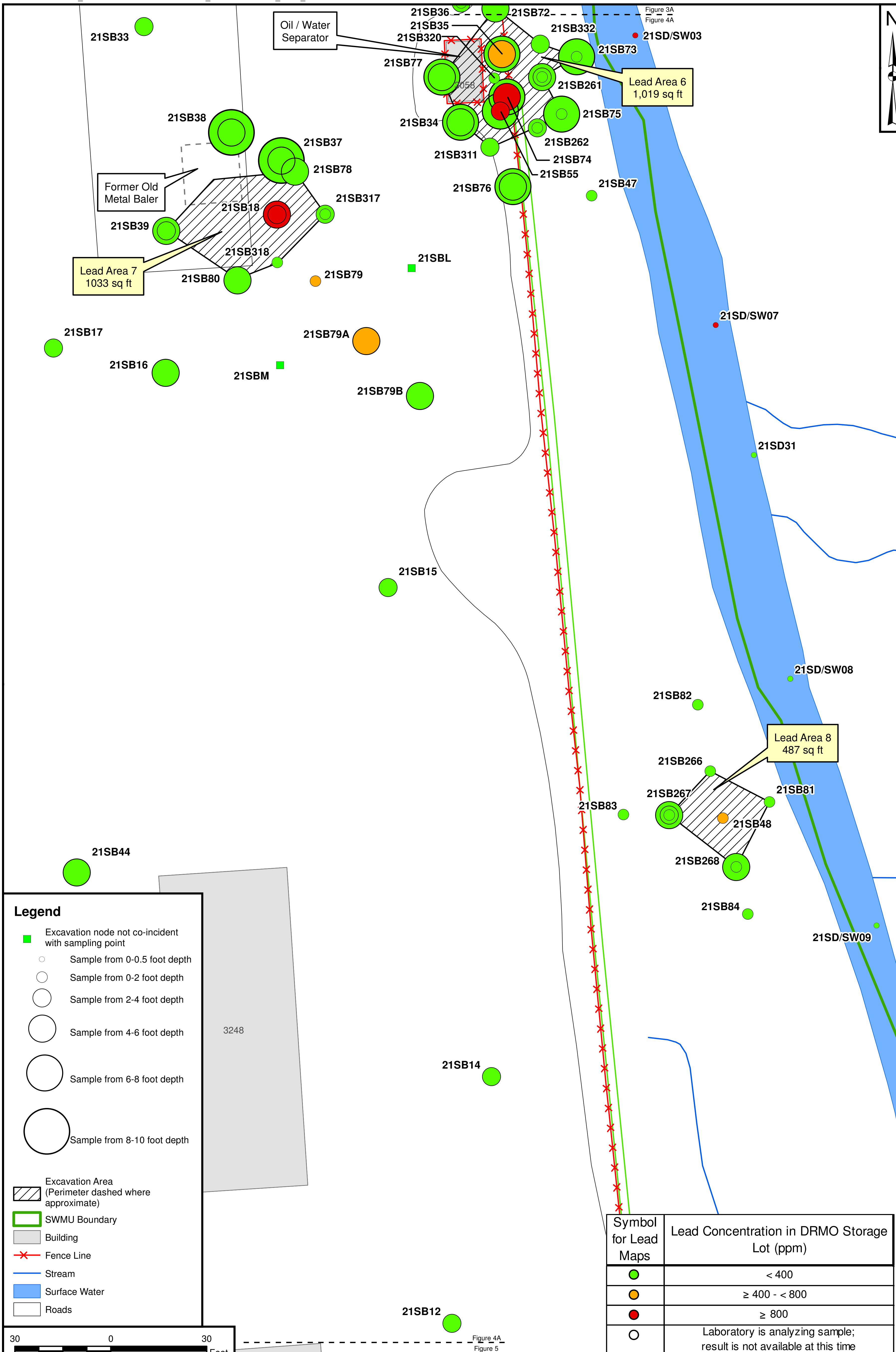
PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_NORTHCENTRAL_LEAD_EXC.MXD 07/09/14 SP



DRAWN BY J. ENGLISH	DATE 12/05/12	NORTH CENTRAL AREA LEAD EXCAVATION AREAS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018 / CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 07/09/14		APPROVED BY ____ DATE ____
REVISED BY S. PAXTON	DATE 07/09/14		APPROVED BY ____ DATE ____
SCALE AS NOTED			FIGURE NO. 3-3A / REV 0

NAVFAC

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SOUTHCENTRAL_LEAD_EXC.MXD 07/09/14 SP



DRAWN BY	DATE
J. ENGLISH	12/05/12
CHECKED BY	DATE
R. BARRINGER	07/09/14
REVISED BY	DATE
S. PAXTON	07/09/14
SCALE	
AS NOTED	

NAVFAC

CENTRAL AREA
LEAD EXCAVATION AREAS
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-4A	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SOUTHCENTRAL_BAP_EXC.MXD 07/10/14 SP

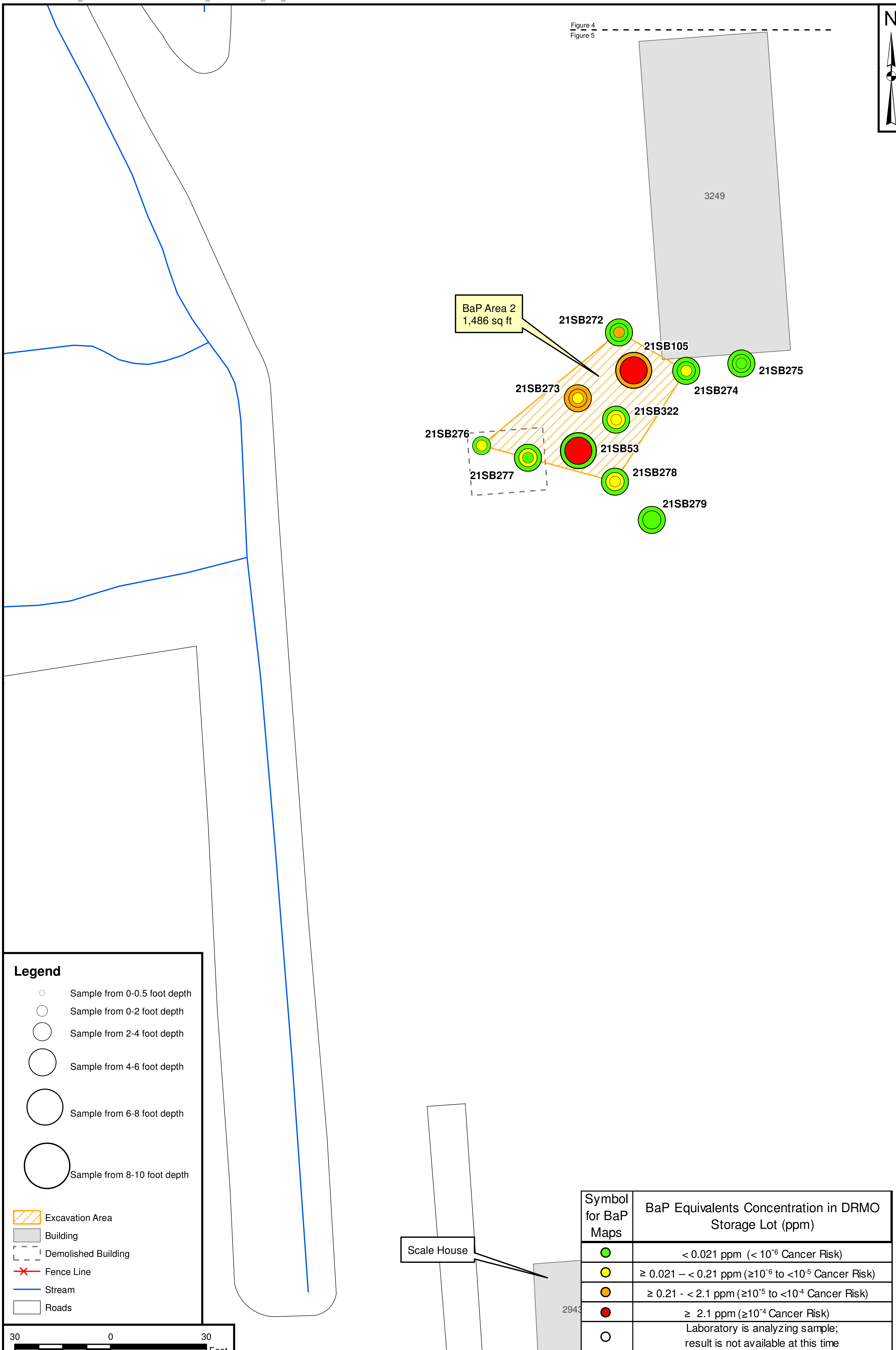
DRAWN BY	DATE
J. ENGLISH	10/04/12
CHECKED BY	DATE
R. BARRINGER	07/10/14
REVISED BY	DATE
S. PAXTON	07/10/14
SCALE	
AS NOTED	

NAVFAC

CENTRAL AREA
BaP EXCAVATION AREA
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

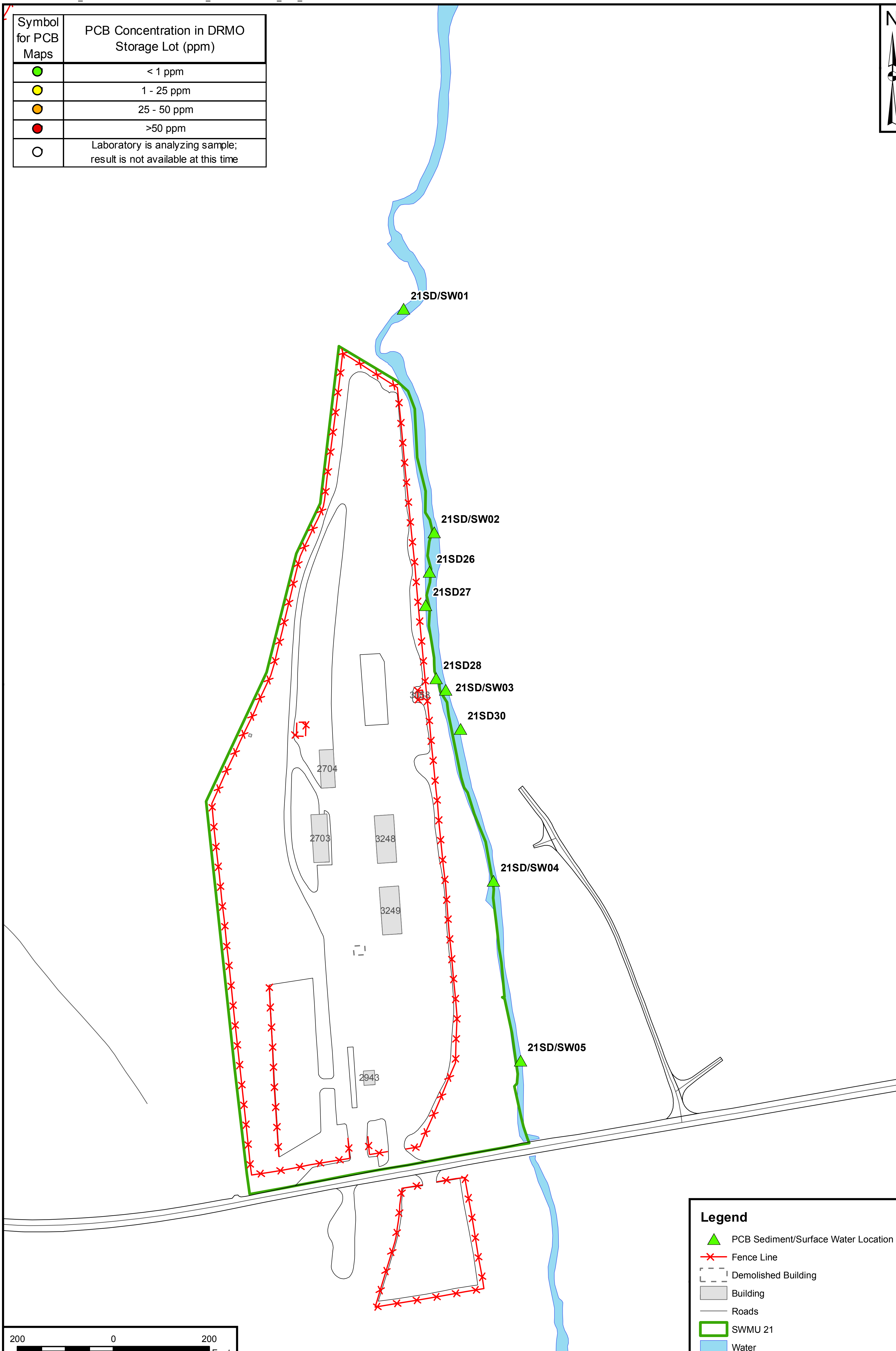
CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-4B	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SOUTHWEST_BAP_EXC.MXD 07/09/14 SP



DRAWN BY	DATE	SOUTHWEST AREA BaP EXCAVATION AREAS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER	CTO NUMBER
J. ENGLISH	12/06/12		6018	F272
CHECKED BY	DATE		APPROVED BY	DATE
R. BARRINGER	07/09/14		APPROVED BY	DATE
REVISED BY	DATE		FIGURE NO.	REV
S. PAXTON	07/09/14		3-5	0
SCALE AS NOTED				

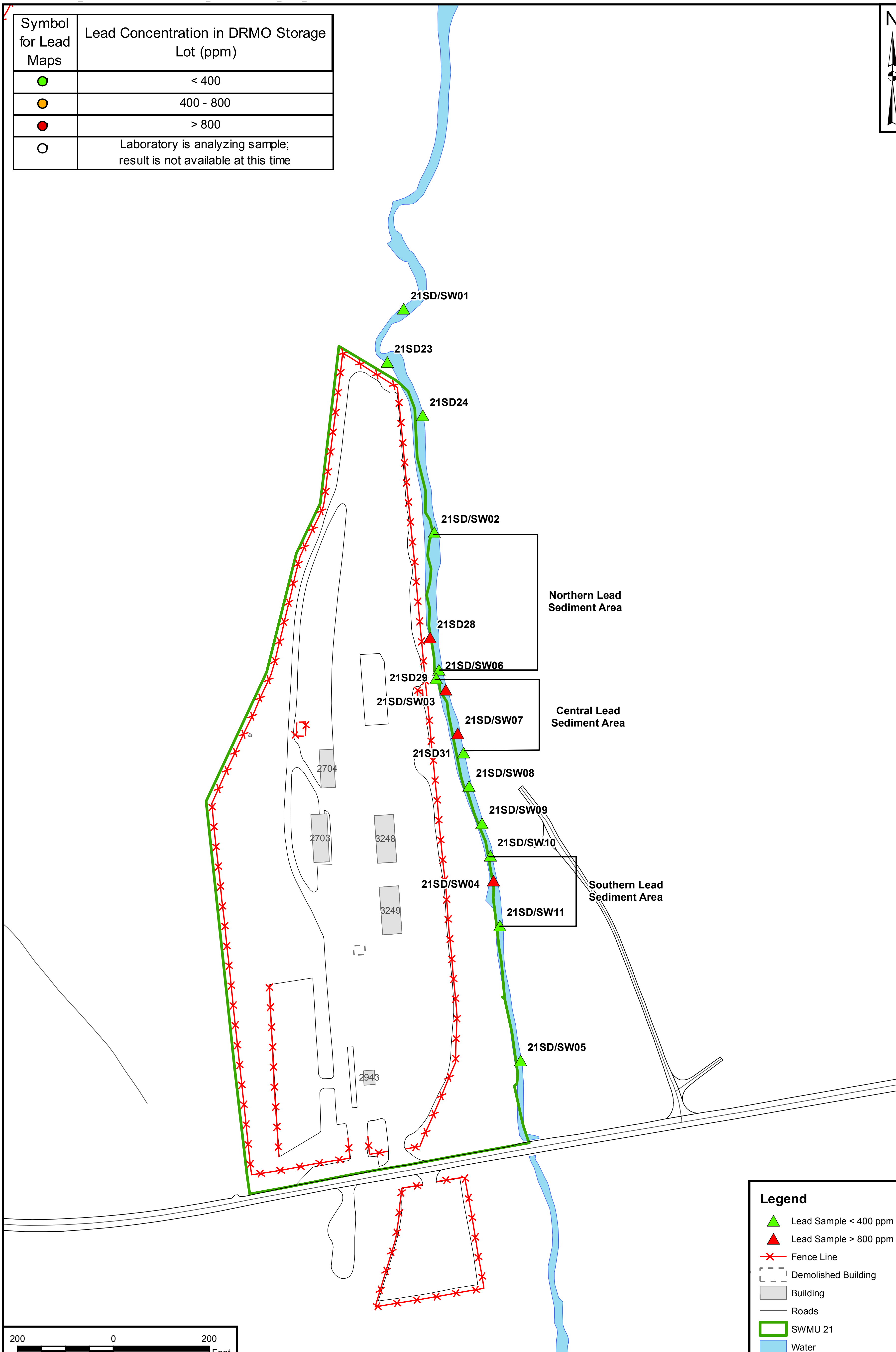
PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_HAYNESBRANCH_PCB_SW.MXD 06/20/14 JN



DRAWN BY J. NOVAK — DATE 06/20/14	NAVFAC	HAYNES BRANCH	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER — DATE 06/20/14		PCB SEDIMENT EXCAVATION AREA	APPROVED BY	DATE
REVISED BY — DATE		SWMU 21 - DRMO STORAGE LOT	APPROVED BY	DATE
SCALE AS NOTED		NSA CRANE CRANE, INDIANA	FIGURE NO. 3-6	REV 0

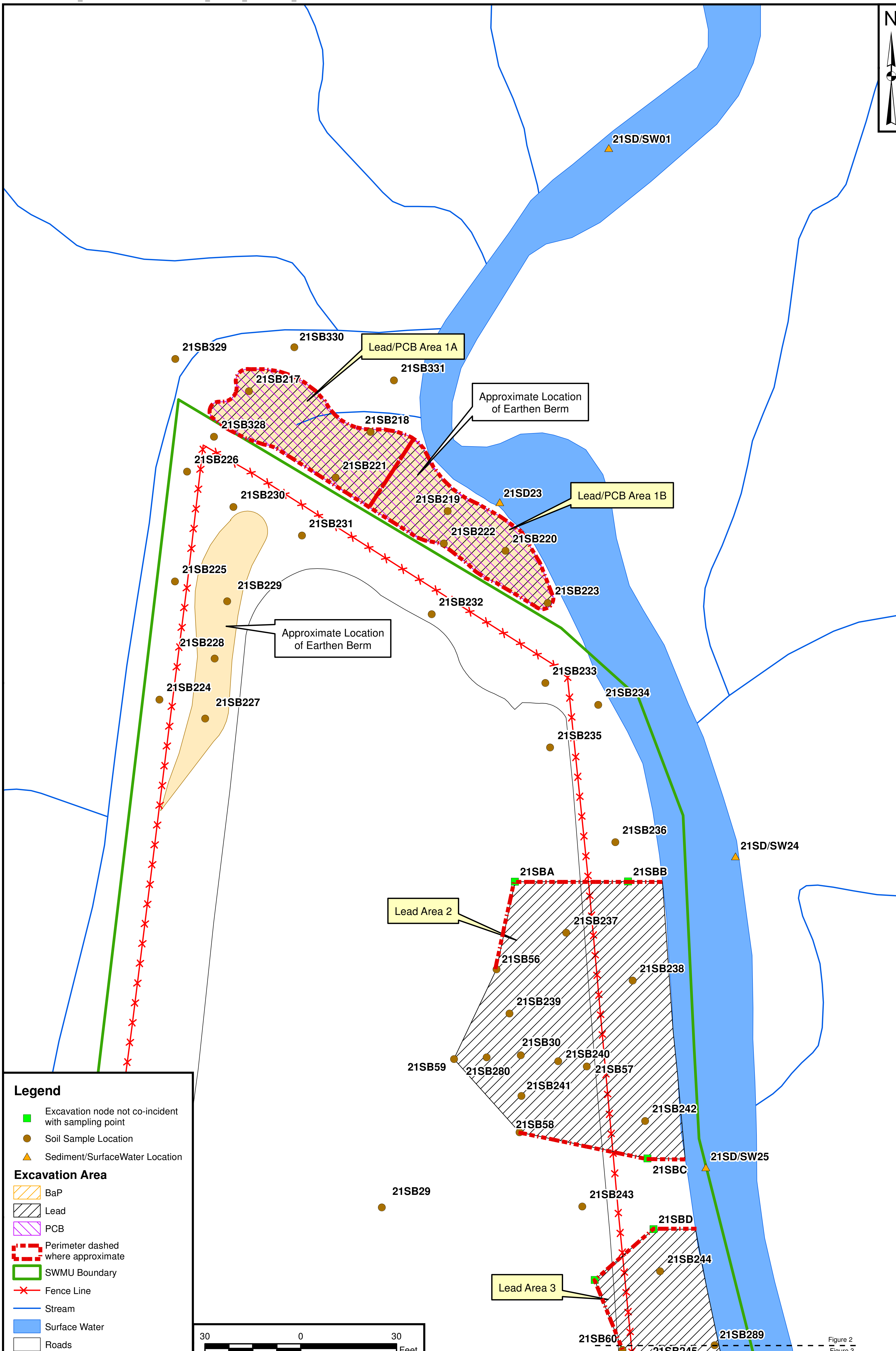
PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_HAYNESBRANCH_LEAD_SW.MXD 06/20/14 JN

Symbol for Lead Maps	Lead Concentration in DRMO Storage Lot (ppm)
● (green)	< 400
● (orange)	400 - 800
● (red)	> 800
○	Laboratory is analyzing sample; result is not available at this time



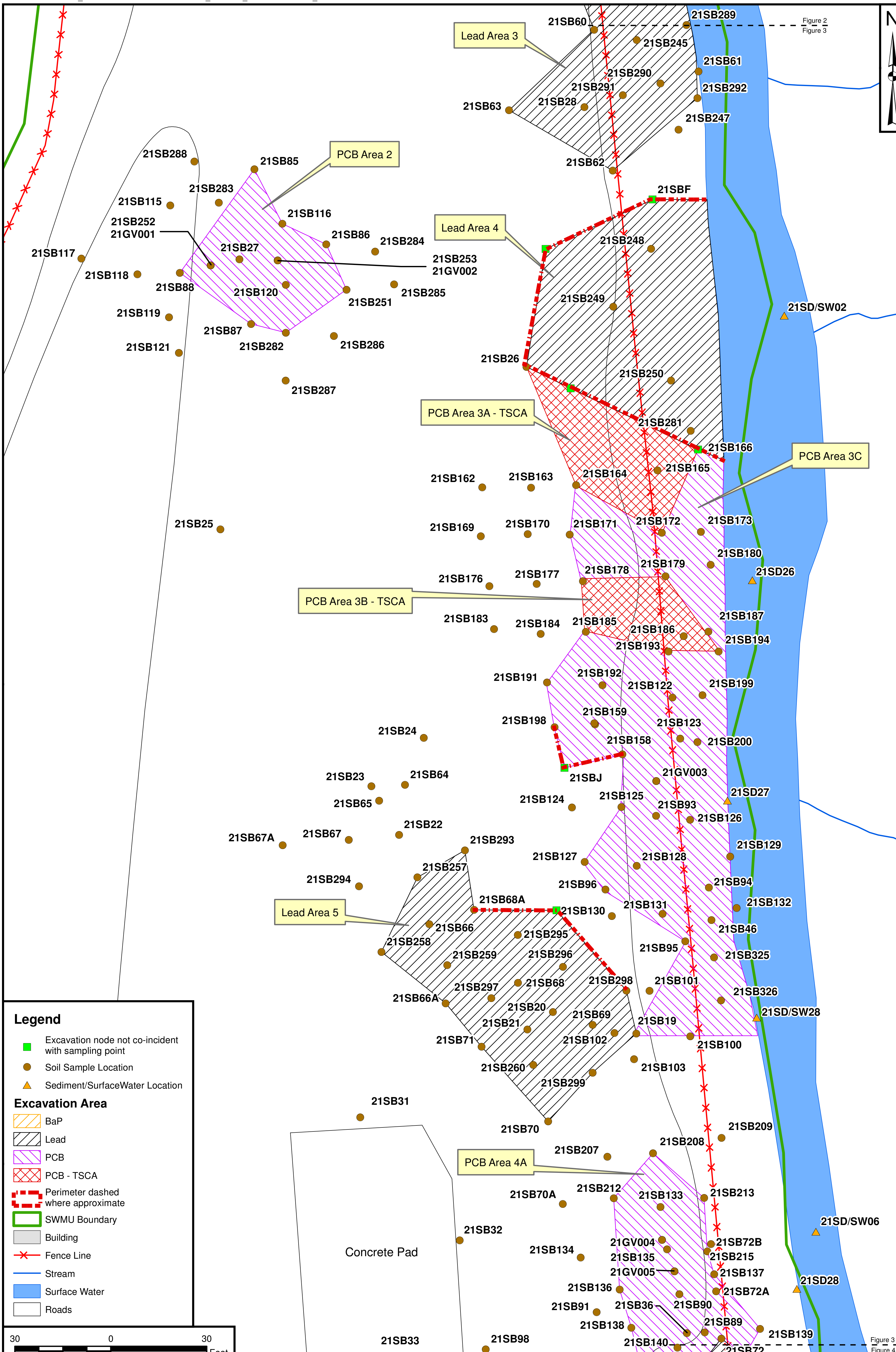
DRAWN BY J. NOVAK	DATE 06/20/14	HAYNES BRANCH LEAD SEDIMENT EXCAVATION AREAS SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 06/20/14		APPROVED BY	DATE
REVISED BY	DATE		APPROVED BY	DATE
SCALE AS NOTED			FIGURE NO. 3-6A	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SAMPLE_NORTHERN_WEXC.MXD 07/09/14 SP



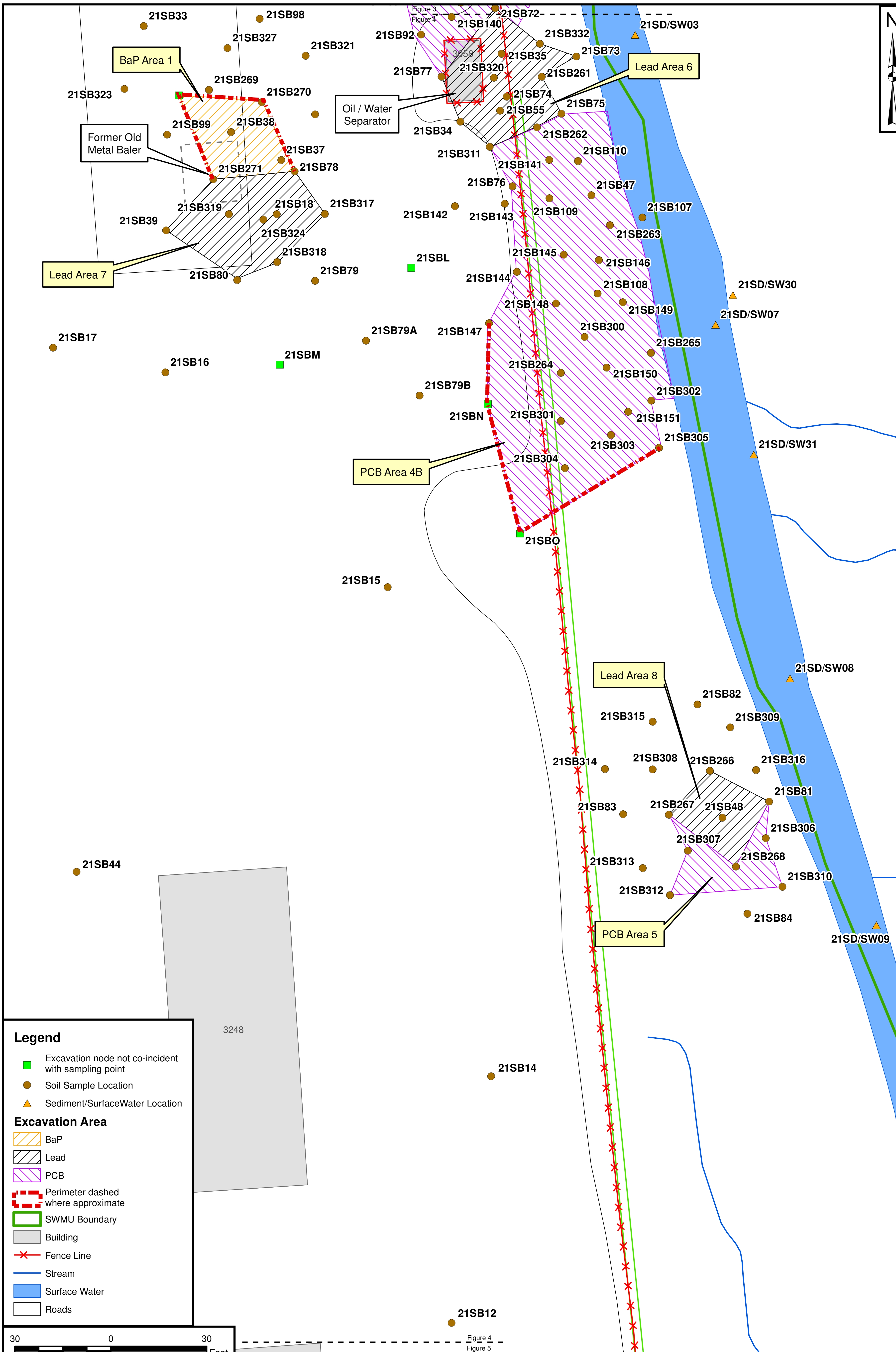
DRAWN BY / DATE		TITLE	CONTRACT NUMBER	CTO NUMBER
J. NOVAK	12/04/12	NORTH AREA - SOIL & SEDIMENT	6018	F272
CHECKED BY / DATE		EXCAVATION AREA	APPROVED BY	DATE
R. BARRINGER	07/09/14	SWMU 21 - DRMO STORAGE LOT		
REVISED BY / DATE		NSA CRANE	APPROVED BY	DATE
S. PAXTON	07/09/14	CRANE, INDIANA		
SCALE	AS NOTED		FIGURE NO. 3-7	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SAMPLE_NORTHCENTRAL_WEXC.MXD 07/09/14 SP



DRAWN BY J. NOVAK	DATE 07/09/14	NORTH CENTRAL AREA - SOIL AND SEDIMENT EXCAVATION AREA SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 6018	CTO NUMBER F272
CHECKED BY R. BARRINGER	DATE 07/09/14		APPROVED BY	DATE
REVISED BY S. PAXTON	DATE 07/09/14		APPROVED BY	DATE
SCALE AS NOTED			FIGURE NO. 3-8	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_SAMPLE_SOUTHCENTRAL_WEXC.MXD 07/09/14 SP

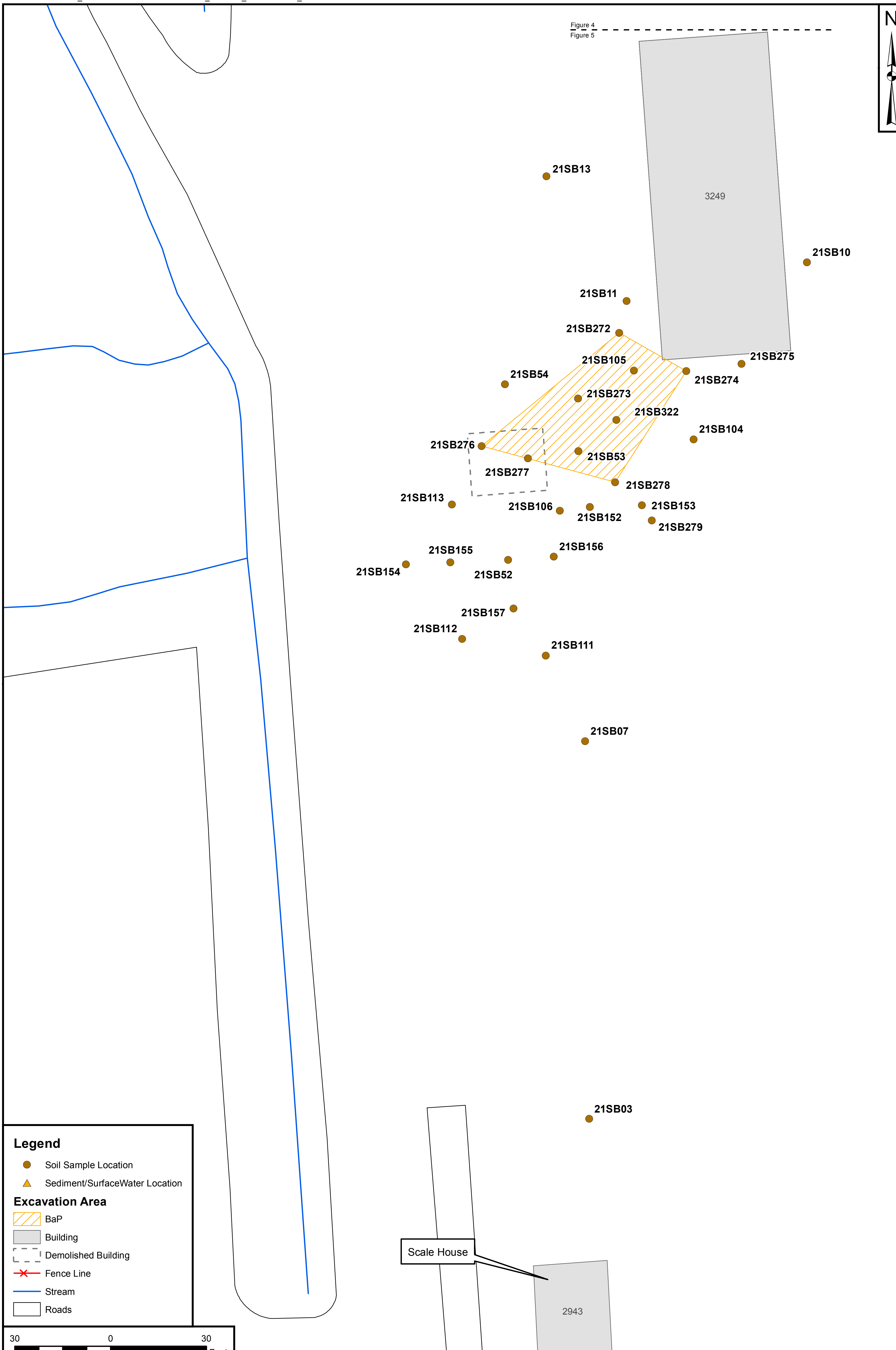


DRAWN BY: J. NOVAK	DATE: 07/09/14	
CHECKED BY: R. BARRINGER	DATE: 07/09/14	
REVISED BY: S. PAXTON	DATE: 07/09/14	
SCALE: AS NOTED		

NAVFAC

CENTRAL AREA - SOIL & SEDIMENT
EXCAVATION AREA
AND PROPOSED SEDIMENT LOCATION
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-9	REV 0



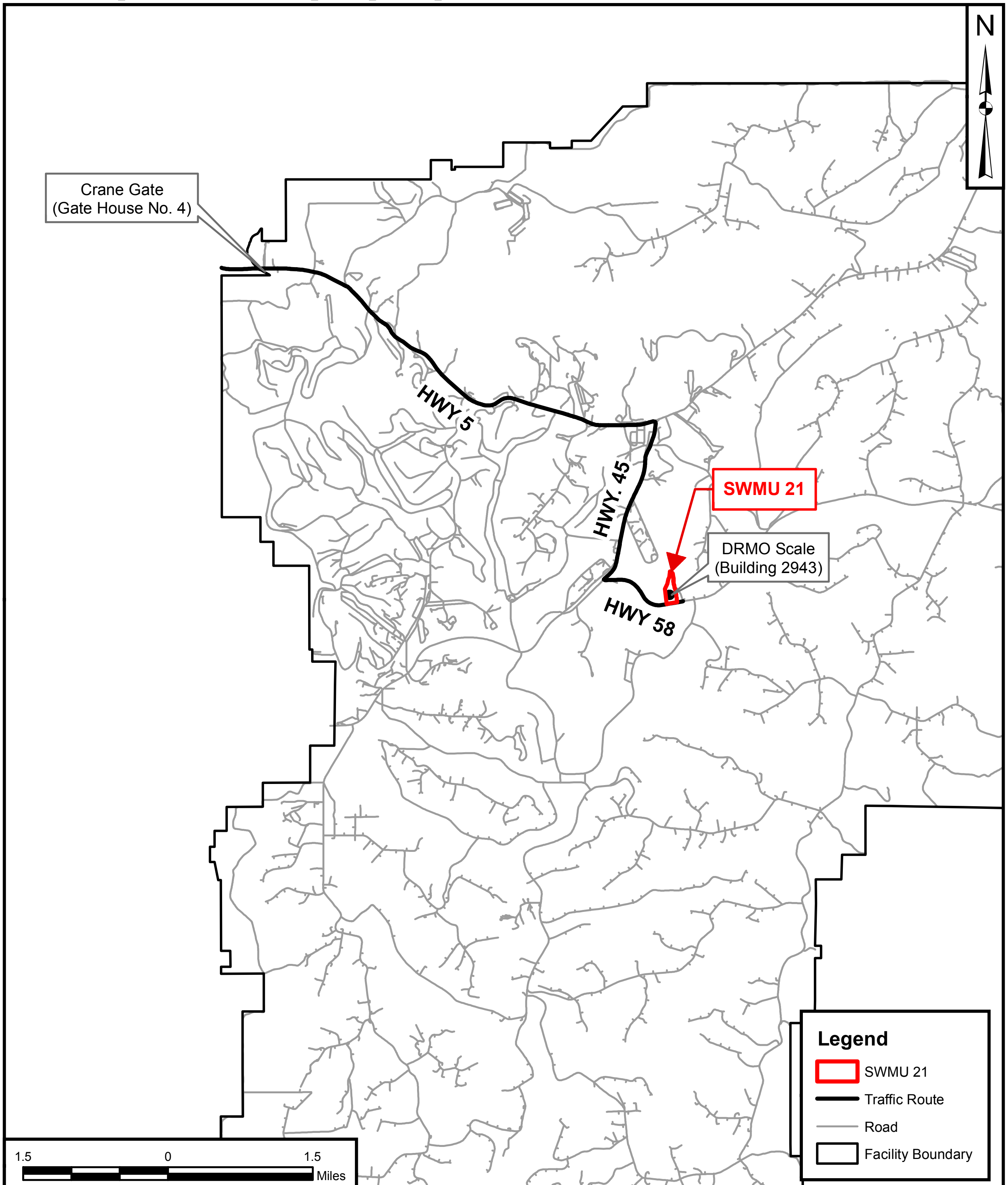
DRAWN BY	DATE
J. ENGLISH	06/06/14
CHECKED BY	DATE
R. BARRINGER	06/06/14
REVISED BY	DATE
SCALE	
AS NOTED	

NAVFAC

SOUTHWEST AREA -
EXCAVATION AREA
SWMU 21 - DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
6018	F272
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. 3-10	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU21_TRAFFIC_CONTROL_PLAN.MXD 06/23/14 SP



DRAWN BY J. NOVAK — DATE 06/11/14	TRAFFIC CONTROL PLAN SWMU 21 - DRMO STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER 1008	CTO NUMBER F272
CHECKED BY R. BARRINGER — DATE 06/23/14		APPROVED BY ___	DATE ___
REVISED BY S. PAXTON — DATE 06/23/14		APPROVED BY ___	DATE ___
SCALE AS NOTED		FIGURE NO. 3-11	REV 0

4.0 EROSION AND SEDIMENT CONTROL PLAN

4.1 PURPOSE

The purpose of this section is to provide the steps that will be taken to minimize and/or eliminate erosion and sedimentation during the implementation of the IMWP at SWMU 21. Additional discussion is provided in this section to describe the basis for site restoration activities, as well as the presentation of response procedures for material spill mitigation. The E&S control plan has been developed in accordance with the guidelines defined in the Indiana Storm Water Quality Manual (Handbook) (IDEM, 2007). The E&S control devices described in this text can be modified based on construction equipment and techniques presented in the Contractor's Work Plan. Selected E&S control devices must be identified in the E&S Control Plan submitted with the Contractor Work Plan. After the E&S Control Plan is approved, no changes can be made without approval by the OICC.

The Contractor should note that this E&S Control Plan assumes that all elements of the SWMU 21 removal action will occur at one time. In the event the Navy elects to phase the construction activities at SWMU 21, all of the E&S Controls identified in this plan may or may not be required. The Contractor must identify the E&S Controls required for the construction activities identified in their work plan.

4.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS

E&S control measures are implemented to reduce or eliminate erosion and sedimentation of soil that would be detrimental to surface water quality. Surface drainage at SWMU 21 either flows into drainage ditches and culverts or flows into Haynes Branch, which discharges to Turkey Creek. Drainage ditches and culverts constructed around SWMU 21 promote local surface drainage and control surface flow. A concrete culvert was constructed adjacent to the eastern DRMO Storage Lot fence line (see site photographs in Appendix A). A narrow grassed area measuring between 25 to 225 feet wide lies between the eastern DRMO Storage Lot fence line and Haynes Branch to the east. Haynes Branch is the primary surface water body receiving runoff from the DRMO Storage Lot.

The elevation of Haynes Branch adjacent to SWMU 21 ranges from 530 feet amsl in the north to less than 520 feet amsl in the south. The drainage ditches are usually dry and are typically only wet during and immediately after rainfall. Figure 1-1 presents the regional surface water drainage features and Figure 1-3 presents the surface water drainages within and immediately adjacent to SWMU 21. Haynes Branch discharges into Turkey Creek, which discharges into Boggs Creek, which discharges into Lake

Gallimore near the southern boundary of NSA Crane. Lake Gallimore is located approximately 8 stream miles south-southwest of SWMU 21 and eventually discharges to a tributary of the Wabash River.

IMWP implementation activities for SWMU 21 will consist of: excavating and disposing PCB-contaminated and PAH-contaminated soil; potentially performing in-situ stabilization of lead-contaminated soil and excavating the metals-stabilized soil for disposal; backfilling excavations; and restoring disturbed areas. Surface and subsurface soil will be excavated from several areas located within SWMU 21. Lead-contaminated sediments are also proposed for excavation from discrete sections of Haynes Branch, the stream that flows to the south, along the eastern margin of SWMU 21, the DRMO Storage Lot.

Considering the type of IMWP activities and access issues, the proposed E&S control measures include the following:

- Silt Fence – Placed along the downslope sides of the surface soil excavation areas and the gravel construction entrances to provide a temporary sediment barrier. Silt fencing consists of synthetic filter fabric and wooden posts.

- Gravel Construction Entrances – Placed as a controlled site entrance to reduce the amount of sediment transported by construction vehicles onto facility and public roads.

- Dust Control – Utilized to prevent surface and air movement of dust from exposed soil surfaces, and to reduce the amount of airborne substances that may present health hazards, traffic safety problems, or harm plant/animal life.

- Biodegradable Features – Utilized to manage surface precipitation and surface flow through the strategic placement of straw bales, coconut fiber matting, or scattered straw to protect newly seeded areas. Erosion control wattles made from all natural fibers such as coconut coir or straw bales may be placed around storm drains or low flow channels to filter and control surface water runoff.

- Permanent Seeding – Utilized to establish perennial vegetation on disturbed areas by planting seeds of native grasses.

The construction, implementation, and maintenance of these E&S control devices will be in accordance with the Handbook. Figures 3-7, 3-8, 3-9, and 3-10 present the proposed excavation areas. Figures 4-1 and 4-2 present typical details of the E&S control devices proposed for IMWP implementation (i.e., silt fence, gravel construction entrance, and in-stream sediment trap). Permanent seeding is discussed in Section 4.4. Dust control will be addressed in the Contractor's Work Plan. All E&S controls will remain in place until all upgradient areas have been stabilized. Stabilization will be determined by the OICC.

4.3 INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS

In general, all E&S control measures will be checked daily and after each runoff-producing rainfall event during the IMWP implementation activities. Any required repairs will be made immediately. The following items will be checked:

- The construction entrance will be maintained in a condition that will minimize tracking sediment onto facility or public roads.

- The silt fence will be checked for undermining or deterioration of the fabric. Sediment will be removed when the level of sediment causes bulging or reaches one-half of the fabric height.

- Seeded areas will be checked regularly to ensure that a good growth of vegetation is maintained, and these areas will be fertilized and reseeded, as needed.

- The fuel and lubricant materials storage area will be checked to ensure that stored containers are not leaking and that any lining system or secondary containment system is functioning properly.

All E&S control devices will be inspected and maintained until the OICC has formally accepted the permanent stabilization of the disturbed areas. The Contractor will maintain a logbook of all E&S control device inspections and maintenance. This logbook will be available at the site at all times for inspection by duly authorized officials including NSA Crane personnel, NAVFAC MidLant, and the IDEM.

4.4 SITE RESTORATION

All areas disturbed by IMWP implementation activities (excavation and support facility areas) will be restored and stabilized using soil, gravel, and permanent seeding. Activities to establish permanent stabilization will be implemented as soon as possible following the establishing of final grades. The establishment of permanent vegetation includes site/seed bed preparation, seeding, and mulching of the following locations:

- Surface soil below support facilities
- Surface soil excavation areas that extend beyond existing gravel paved areas

The procedures and requirements for permanent seeding activities are presented in Section 3.12 of the Handbook. The seed mixture recommended for use at SWMU 21 is a standard Indiana seed mixture for open and disturbed areas. The seed mixture includes perennial ryegrass and tall fescue. Planting rates and optimum soil pH for this mixture are presented in Exhibit 3.12-C of the Handbook. Following seeding, the seeded areas will be covered with temporary erosion control matting (e.g., biodegradable materials such as coconut fiber matting, straw, etc.) to provide additional stabilization until vegetation is established. In the event that disturbed areas are brought to final grade outside of the optimal growing season for the permanent seed mixture, the disturbed areas will be temporarily stabilized using a temporary seed mixture. The procedures and requirements for establishing temporary stabilization are presented in Section 3.11 of the Handbook. As indicated in the Handbook, E&S control devices will remain in place until permanent stabilization is established over the disturbed areas. Therefore, E&S control devices will not be removed by the Contractor until directed by the OICC.

4.5 RESPONSE PROCEDURES FOR SPILL MITIGATION

Potential non-stormwater discharges anticipated during IMWP implementation activities include: dewatering liquids; wash water generated during decontamination of field equipment and vehicles; fuel and lubricant spills during vehicle fueling, lubrication, and maintenance; spills of fertilizers; and spills of small quantities of laboratory chemicals used in sample collection, and other flammable substances.

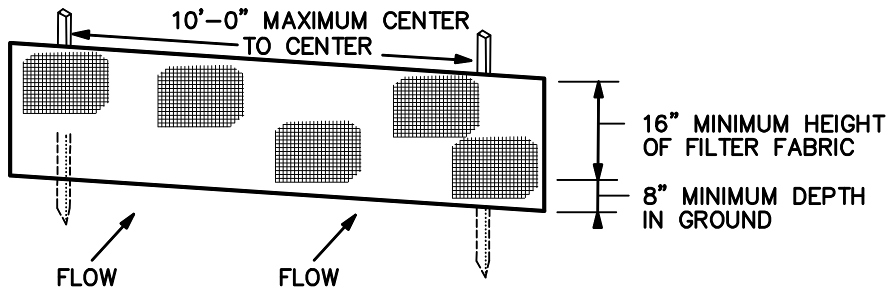
The water from the temporary decontamination pad will be collected for off-site disposal by the EMAC contractor. All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans to contain any spills that may occur, or will be done within the decontamination pad to contain spills. Containers of detergents and vehicle maintenance fluids (e.g., oil, grease, antifreeze, hydraulic fluid, etc.) will be stored within an enclosed, lined, diked area along with the equipment fuel, which is stored in tanks. This area, referred to as the materials storage area, will be bermed and lined with a 60-mil low-density polyethylene (LDPE) geomembrane, and will be sized to contain 110 percent of the volume stored within the area. A small sump, or low point in the liner, will be designed to serve as a collection and monitoring point for any leaks or spills from the containers stored within the materials storage area. When not in use, chemicals, paints, and other flammable substances will be stored in a flammable storage cabinet located within the Contractor's equipment trailer. The EMAC is responsible to keep flammable and hazardous materials properly segregated and stored.

Good housekeeping procedures will be followed to reduce risks associated with these materials. These procedures include, but are not limited to: keeping materials in their original containers whenever possible; maintaining original labels and Material Safety Data Sheets (MSDSs); and using proper disposal methods for surplus materials. Some chemicals may require storage in a HAZMAT locker separate from flammables. Accidental spills that may occur will be contained as appropriate for the spilled medium (liquid or solid), and collected and containerized immediately after discovery of the spill. Containerized material will be characterized for off-site transportation and disposal. The following spill mitigation equipment should be available on site during construction activities:

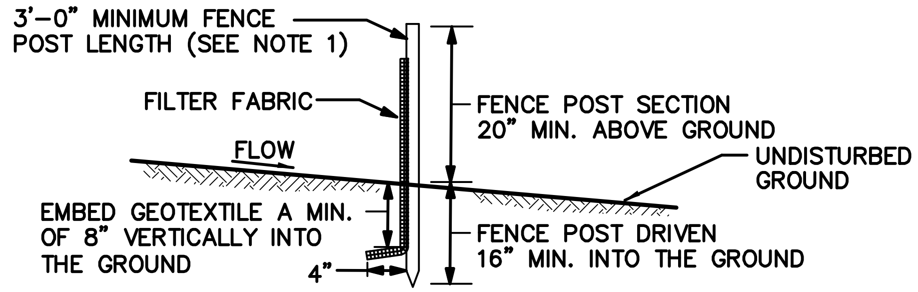
- Drip pans
- Oil-dry or similar compound
- Absorbent socks
- Shovels
- 55-gallon drums or storage tank (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated, and material storage and handling procedures will be reviewed and revised where appropriate. All spills will be reported to the NSA Crane Environmental Department.

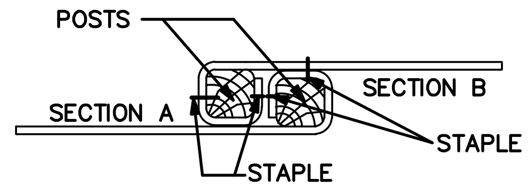
ACAD: 0352CD05.dwg 6/11/14 CK PIT



PERSPECTIVE VIEW



CROSS SECTION

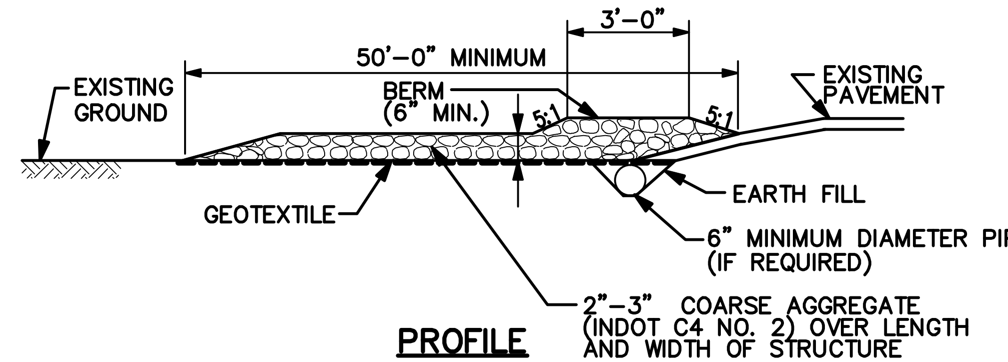


TOP VIEW – JOINING TWO
ADJACENT SILT FENCE SECTIONS

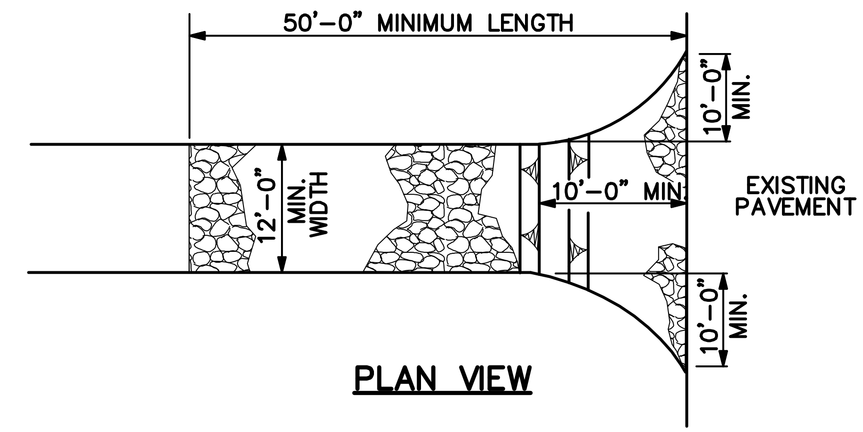
NOTES:

1. WOOD POSTS SHALL BE 1.5" BY 1.5" SQUARE (MIN) CUT OR 1.75" DIAMETER (MIN) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
2. FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
3. INSTALL SILT FENCE PARALLEL TO THE CONTOUR OF THE LAND.

SILT FENCE



PROFILE

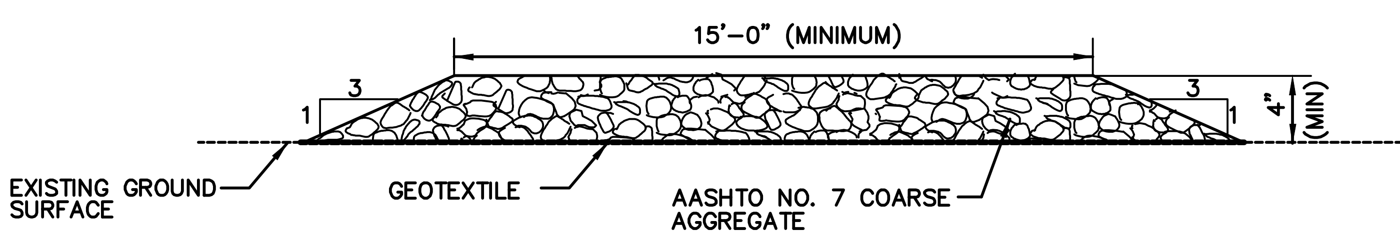


PLAN VIEW

NOTES:

1. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE.
2. IF REQUIRED PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER WILL BE REQUIRED.

GRAVEL CONSTRUCTION ENTRANCE

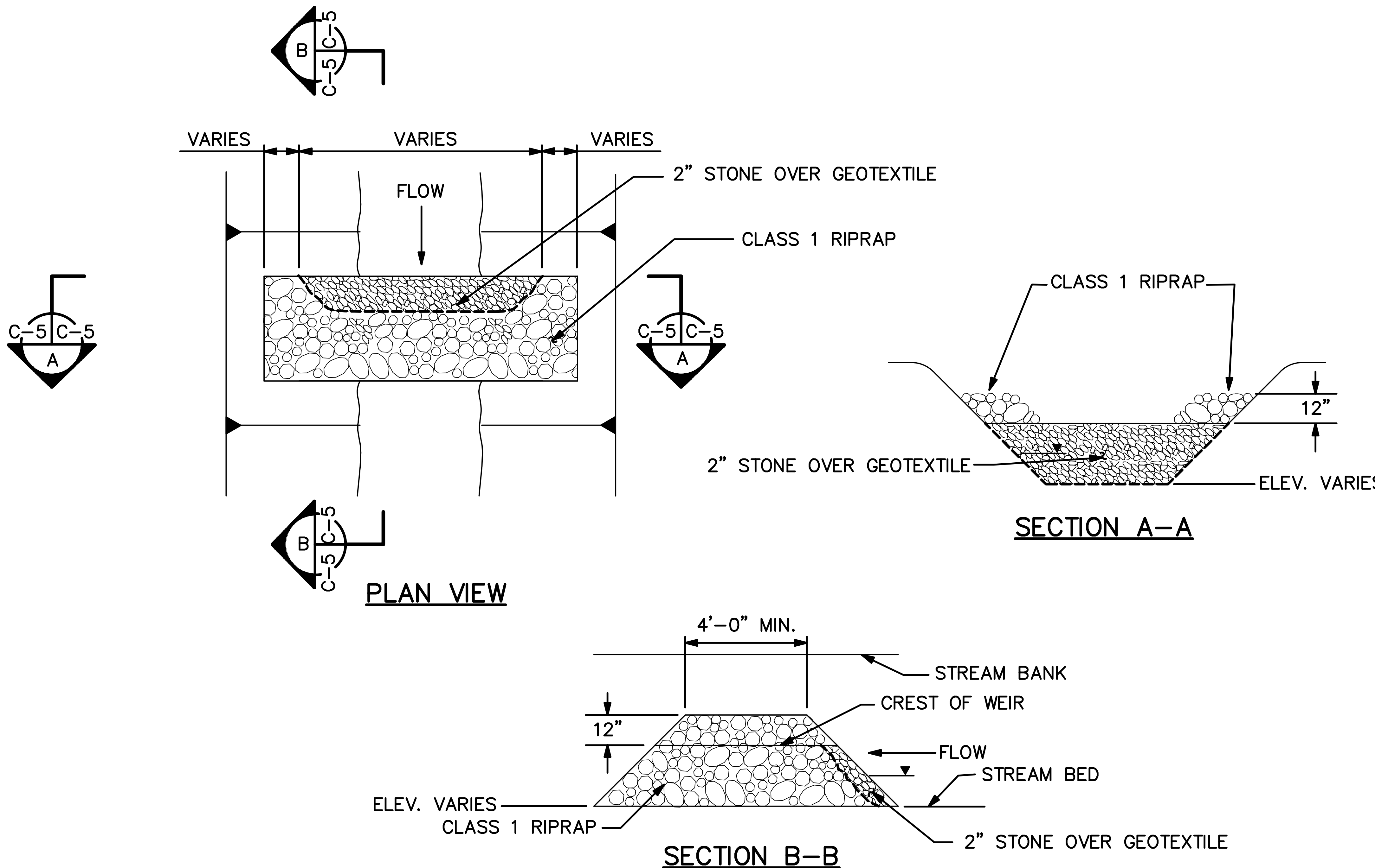


TEMPORARY SITE ACCESS ROAD

NOT TO SCALE

DRAWN BY MF / DATE 5/16/06	EROSION AND SEDIMENT CONTROL DEVICES SWMU 21 DRMO STORAGE LOT INTERIM MEASURES WORK PLAN NSA CRANE CRANE, INDIANA	CONTRACT NO. –1008	
CHECKED BY RB / DATE 6/11/14		CTO NO. F272	
REVISED BY / DATE		APPROVED BY	DATE
SCALE AS NOTED		DRAWING NO. FIGURE 4–1	REV. 0

NAVFAC



NOTE:

1. GABION BASKETS – GABION BASKETS WITH GEOTEXTILE CAN BE USED INSTEAD OF STONE.

IN-STREAM SEDIMENT TRAP

NOT TO SCALE

DRAWN BY MF DATE 5/16/06	EROSION AND SEDIMENT CONTROL DEVICES (SHEET 2 OF 2) SWMU 21 DRMO STORAGE LOT INTERIM MEASURES WORK PLAN NSA CRANE CRANE, INDIANA	CONTRACT NO. -1008
CHECKED BY RB DATE 6/11/14		CTO NO. F272
REVISED BY DATE		APPROVED BY DATE
SCALE AS NOTED		DRAWING NO. FIGURE 4-2 REV. 0

NAVFAC

ACAD: 0352CD06.dwg 6/11/14 CK PIT

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APPENDIX A

PHOTOGRAPHS

Appendix A - Photographs

Date: 07/09/09	View: N	Photographer: G. Ten Eyck

View of: DRMO Storage Lot view from west gate looking north. Truck scale and scale house (Building 2943) in foreground.

Date: 07/09/09	View: N	Photographer: G. Ten Eyck

View of: DRMO Storage Lot view from east gate looking north. Scale house (Building 2943) in foreground. Process building 3249 and Metals Balers 2918 in background.

Date: 07/09/09	View: N	Photographer: G. Ten Eyck

View of: DRMO Storage Lot view from truck scale looking north. Old scale house (Building 1940) in foreground to left and Metals Balers 2918 to the right.

Date: 07/09/09	View: SE	Photographer: G. Ten Eyck

View of: DRMO Storage Lot view from west looking southeast. Office Building 2703 in foreground and Process Buildings 3248 and 3249 in background.

Appendix A - Photographs

Date: 07/09/09	View: N	Photographer: G. Ten Eyck
View of: DRMO Storage Lot view looking north. East side of Process Building 3249 in foreground to left. Backhoe and materials located on gravel pad		

Date: 07/09/09	View: N	Photographer: G. Ten Eyck
View of: North end of DRMO Storage Lot looking north		

Date: 07/09/09	View: S	Photographer: G. Ten Eyck
View of: Haynes Branch looking north. Photograph location is east of center of the site		

Date: 07/09/09	View: NW	Photographer: G. Ten Eyck
View of. Building 2704 in background and concrete storage area in foreground. Photo looking northwest.		

Appendix A - Photographs

Date: 07/09/09	View: N	Photographer: G. Ten Eyck
View of: Concrete drainage ditch looking north. Grass area to the right.		

Date: 07/09/09	View: NE	Photographer: G. Ten Eyck
View of: Metals Baler 2918.		

Date: 07/09/09	View: S	Photographer: G. Ten Eyck
View of: Old Metals Baler 2705		

Date: 07/09/09	View: S	Photographer: G. Ten Eyck
View of: Oil/Water Separator 3058 in foreground and Process Buildings in the background.		

Date: 5/14/09	View: N	Photographer: T. Evans

View from gate to the north with scale and scale Building 2943 in foreground. Metal Baler 2918 in background.

Date: 5/14/09	View: W	Photographer: T. Evans

View from gravel pad towards Metal Baler 2918. Note scrap metal visible on left side of photo. Hillside on west side of DRMO Storage Lot in background.

Date: 5/14/09	View: N	Photographer: T. Evans

View to the north with west side of Building 3249 visible on right side of photo, Building 2703 in center left, and Building 2704 in left background.

Date: 5/14/09	View: N	Photographer: T. Evans

Facing north at gravel pad. East side of Building 3248 visible on left side of the photo. East fence line seen on right side of photo.

Date: 5/14/09	View: N	Photographer: T. Evans
View north from approximate center of site. Building 2705 in center of photo, scrap metal on Paved Storage Yard in background, and oil/water separator to the left.		

Date: 5/14/09	View: NE	Photographer: T. Evans
View of oil/water separator (Structure 3058) with east fence line in background.		

Date: 5/14/09	View: S	Photographer: T. Evans
Facing south from northeast corner of Site. Note elevated western portion of the Site in left side of photo.		

Date: 5/14/09	View: SE	Photographer: T. Evans
Facing south-southeast over fence at open grassed area east of Gravel Pad. Route H-58 in background. Haynes Branch behind tree line in the left background.		

Appendix A - Photographs

Date: 5/14/09	View: NW	Photographer: T. Evans

View of Paved Storage Yard north of Building 2705.

Date: 5/14/09	View: N	Photographer: T. Evans

Facing north at north area of Site with Paved Storage Yard to the left.

Date: 7/10/09	View: N	Photographer: G. Ten Eyck

View of concrete drainage ditch east of east fence. Conveyed runoff to oil/water separator.

Date: 5/14/09	View: N	Photographer: T. Evans

View of Metal Baler 2918.

APPENDIX B

ANALYTICAL DATA

B.1 SWMU 21 SOIL SAMPLE ANALYTICAL DATA

B.2 SWMU 21 SEDIMENT SAMPLE ANALYTICAL DATA

B.1 SWMU 21 SOIL SAMPLE ANALYTICAL DATA

(Included on document CD)

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB01	21SB02	21SB03	21SB04	21SB05	21SB06	21SB07		21SB08	21SB09	21SB10	21SB11	21SB12	21SB13	21SB14
SAMPLE ID	21SB01-SO-0002	21SB02-SO-0002	21SB03-SO-0002	21SB04-SO-0002	21SB05-SO-0002	21SB06-SO-0002	21SB07-SO-0002	21SB07-SO-0002-D	21SB08-SO-0002	21SB09-SO-0002	21SB10-SO-0002	21SB11-SO-0002	21SB12-SO-0002	21SB13-SO-0002	21SB14-SO-0002
SAMPLE DATE	20100914	20100914	20100914	20100914	20100914	20100914	20100914	20100914	20100914	20100915	20100914	20100915	20100914	20100915	20100915
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	3	2	2	1	4	1.5	2	2	1	1	6	4	2.5	2.5	2
BOTTOM DEPTH	5	4	4	3	6	3.5	4	4	3	3	8	6	4	4	4
METALS (MG/KG)															
ALUMINUM	15200	13100	14100	15400	14900	12900	12700	15200	12300	17000	16700	3800	13400	10900	10600
ANTIMONY	0.191 J	0.14 J	0.151 J	0.166 J	0.5 U	0.122 J	0.122 J	0.252 J	0.331 J	0.335 J	0.134 J	0.495 U	0.154 J	0.5 U	0.481 U
ARSENIC	8.92 J	5.12 J	5.59 J	6.26 J	11 J	4.44 J	6.49 J	5.48 J	6.26 J	5.28 J	10.2 J	2.1 J	5.6 J	6.81 J	8.39 J
BARIUM	98.4	229	92.2	107	85.2	145	115	87.4	67	69.1	360	38	88.2	40.5	82.4
BERYLLIUM	0.754	0.967	0.879	0.677	0.673	0.85	0.927	0.615	0.654	0.627	1.14	0.347 J	0.935	0.486 J	0.703 J
CADMIUM	0.152 J	0.318 J	0.245 J	0.279 J	0.496 J	0.303 J	0.217 J	0.155 J	0.906	0.737	0.241 J	0.331 J	0.358 J	0.373 J	0.181 J
CALCIUM	2870	10700	6420	6330	5910	3550	1960	3290	7590	6390	3250	9330	11500	17600	7830
CHROMIUM	18	16.4	20.2	19.4	18.4	16.3	15.4	19.7	22.4	24.3	20.1	10.6	21.2	19	14.9
COBALT	13	22.7	14.5	10.1	9.98	10.3	12.3	13.2	12.9	7.2	15.9	2.47	11.5	13.2	11.3
COPPER	9.95	10.7	9.11	11.7	22.1	10.4	9.11	9.6	38.4	25	13.2	8.46	14.1	11.6	12.6
IRON	21100 J	22200 J	22000 J	22100 J	29800 J	20400 J	16100 J	21500 J	25900 J	23200 J	39500 J	11700	22000 J	28300	12200
LEAD	16.6	27.2	19.8	14.2	21.5	12.5	18.1	14.6	32.9	32.6	15.7	9.37 J	20.5	19.4 J	34.7 J
MAGNESIUM	2010	2840	1690	2440	3050	2460	1330	1760	2280	2940	1960	1020	2950	3690	3570
MANGANESE	1520 J	1580 J	2490 J	414 J	355 J	415 J	1970 J	2350 J	432 J	362 J	591 J	32	428 J	236	96.4
MERCURY	0.0888	0.0311 J	0.0648	0.0579	0.0127 J	0.0147 J	0.0742	0.0827	0.0326 J	0.166	0.013 J	0.0473	0.0337 J	0.0616	0.0338 J
NICKEL	12.2 J	27.1 J	11.3 J	12.2 J	11.4	19.4 J	11.8 J	10.6 J	19.3 J	15.8 J	23.7 J	3.67	26.1 J	12.1	23.6
POTASSIUM	768	1180	693	801	866	862	602 J	714	819	937	1020	661	1550	858	3160
SELENIUM	0.672 J	0.522 J	0.724 J	0.632 J	0.491 J	0.469 J	0.726 J	0.677 J	0.385 J	0.451 J	0.487 J	0.272 J	0.322 J	0.553 J	0.321 J
SILVER	0.0457 J	0.0433 J	0.0453 J	0.238 U	0.0449 J	0.231 U	0.0485 J	0.0422 J	0.103 J	0.0406 J	0.238 U	0.248 U	0.243 U	0.25 U	0.0744 J
SODIUM	335 U	297 U	321 U	301 U	293 U	301 U	302 U	309 U	298 U	313 U	324 U	307 U	297 U	283 U	313 U
THALLIUM	0.245 J	0.177 J	0.27 J	0.219 J	0.321 J	0.158 J	0.261 J	0.248 J	0.149 J	0.191 J	0.252 J	0.115 J	0.139 J	0.203 J	0.19 J
VANADIUM	30	11.2	31	28.7	31.5 J	14.3	26	29.5	22.4	25.1	22	10.2	11.5	27.7	4.95
ZINC	39.4 J	33.3 J	36.7 J	37.1 J	55.3 J	28.7 J	35.2 J	39.5 J	120 J	101 J	41.3 J	23.4 J	34.2 J	39.4 J	17.8 J
MISCELLANEOUS PARAMETERS (S.U.)															
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)															
AROCLOR-1016	0.008 U	0.0071 U	0.0077 U	0.0072 U	0.007 U	0.0072 U	0.0073 U	0.0074 U	0.0072 U	0.0075 U	0.0078 U	0.0074 U	0.0071 U	0.0068 U	0.0075 U
AROCLOR-1221	0.008 U	0.0071 U	0.0077 U	0.0072 U	0.007 U	0.0072 U	0.0073 U	0.0074 U	0.0072 U	0.0075 U	0.0078 U	0.0074 U	0.0071 U	0.0068 U	0.0075 U
AROCLOR-1232	0.008 U	0.0071 U	0.0077 U	0.0072 U	0.007 U	0.0072 U	0.0073 U	0.0074 U	0.0072 U	0.0075 U	0.0078 U	0.0074 U	0.0071 U	0.0068 U	0.0075 U
AROCLOR-1242	0.0054 U	0.0047 U	0.0051 U	0.0048 U	0.0047 U	0.0048 U	0.0048 U	0.0049 U	0.0048 U	0.005 U	0.0052 U	0.0049 U	0.0048 U	0.0045 U	0.005 U
AROCLOR-1248	0.004 U	0.0036 U	0.0039 U	0.0036 U	0.0035 U	0.0036 U	0.0036 U	0.0037 U	0.0036 U	0.032	0.0039 U	0.0037 U	0.0036 U	0.0034 U	0.0038 U
AROCLOR-1254	0.0054 U	0.0047 U	0.0051 U	0.0048 U	0.0047 U	0.0048 U	0.0048 U	0.0049 U	0.019 J	0.062	0.0052 U	0.0049 U	0.02 J	0.0045 U	0.012 J
AROCLOR-1260	0.008 U	0.0071 U	0.0077 U	0.0072 U	0.007 U	0.0072 U	0.0073 U	0.0074 U	0.022	0.039	0.0078 U	0.0074 U	0.0071 U	0.0068 U	0.013 J
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.041	0.133	0 U	0 U	0.02	0 U	0.025
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)															
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.011 U	0.0098 U	0.011 U	0.01 U	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0011 J	0.01 U	0.011 U	0.01 U	0.0037 J	0.078	0.0028 J
ACENAPHTHENE	0.011 U	0.0098 U	0.011 U	0.01 U	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.01 U	0.0099 U	0.015	0.01 U
ACENAPHTHYLENE	0.011 U	0.0098 U	0.00079 J	0.0025 J	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.01 U	0.0099 U	0.0021 J	0.01 U
ANTHRACENE	0.011 U	0.0098 U	0.00097 J	0.00068 J	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.0011 J	0.027	0.00059 J	0.025	0.00093 J
BAP EQUIVALENT-HALFND	0.0072335	0.0098 U	0.0167391	0.065836	0.0105758	0.01 U	0.01 U	0.01 U	0.0114353	0.0067092	0.016834	0.044242	0.0054035	0.064274	0.0057653
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.0011 J	0.0098 U	0.0069 J	0.026	0.00091 J	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011	0.041	0.0014 J	0.043 J	0.0028 J
BENZO(A)PYRENE	0.0013 J	0.0098 U	0.012	0.048	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.00059 J	0.012	0.033 J	0.004 J	0.04 J	0.0028 J
BENZO(B)FLUORANTHENE	0.0022 J	0.0098 U	0.016	0.054	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.0011 J	0.015	0.01 UJ	0.0048 J	0.037 J	0.0049 J
BENZO(G,H,I)PERYLENE	0.0008 J	0.0098 U	0.0065 J	0.03	0.0074 J	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.0049 J	0.038 J	0.0021 J	0.043 J	0.01 U
BENZO(K)FLUORANTHENE	0.0015 J	0.0098 U	0.011	0.05	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.00082 J	0.015	0.01 UJ	0.0031 J	0.032 J	0.0031 J
CHRYSENE	0.0015 J	0.0098 U	0.0091 J	0.036	0.0013 J	0.01 U	0.01 U	0.01 U	0.00076 J	0.00098 J	0.014	0.092	0.0025 J	0.054 J	0.0043 J
DIBENZO(A,H)ANTHRACENE	0.011 U	0.0098 U	0.0015 J	0.0057 J	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.0014 J	0.01 UJ	0.00051 J	0.012 J	0.0018 J
FLUORANTHENE	0.011 U	0.0098 U	0.014	0.0091 J	0.0034 J	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.012	0.039	0.003 J	0.066	0.0042 J
FLUORENE	0.00086 J	0.0098 U	0.011 U	0.01 U	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.00057 J	0.011 U	0.0024 J	0.0099 U	0.015	0.01 U
INDENO(1,2,3-CD)PYRENE	0.00087 J	0.0098 U	0.0083 J	0.036	0.0025 J	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.0067 J	0.015 J	0.0024 J	0.039 J	0.0036 J
NAPHTHALENE	0.011 U	0.0098 U	0.011 U	0.01 U	0.0097 UJ	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.011 U	0.01 UJ	0.0016 J	0.028 J	0.0018 J
PHENANTHRENE	0.0023 J	0.0098 U	0.0027 J	0.0019 J	0.0023 J	0.01 U	0.01 U	0.01 U	0.0016 J	0.01 U	0.0029 J	0.0048 J	0.006 J	0.23 J	0.0061 J
PYRENE	0.011 U	0.0098 U	0.019	0.014	0.0056 J	0.01 U	0.01 U	0.01 U	0.0099 U	0.01 U	0.018	0.65 J	0.0099 U	0.16 J	0.0067 J
VOLATILES (UG/KG)															
1,1,1-TRICHLOROETHANE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
1,1,2,2-TETRACHLOROETHANE	0.93 U	1 U	1.1 U	1 U	1.1 UJ	1.2 U	1.1 UJ	1.1 U	1 UJ	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 UJ
1,1,2-TRICHLOROETHANE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.6 U	2.9 U	3 U
1,1-DICHLOROETHANE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
1,1-DICHLOROETHENE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.6 U	2.9 U	3 U
1,2-DICHLOROETHANE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
BENZENE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
CHLOROETHANE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 UJ	2.7 U	2.5 UJ	2.6 U	2.9 UJ	3 U
CHLOROMETHANE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 UJ
CIS-1,2-DICHLOROETHENE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
ETHYLBENZENE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.6 U	2.9 U	3 U
M+P-XYLENES	0.47 U	0.51 U	0.54 U	0.51 U	0.55 U	0.6 U	0.53 U	0.53 U	0.52 U	0.53 U	0.54 U	0.5 U	0.53 U	0.59 U	0.6 U
O-XYLENE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
TETRACHLOROETHENE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.6 U	2.9 U	3 U
TOLUENE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.3 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
TOTAL XYLENES	0.47 U	0.51 U	0.54 U	0.51 U	0.55 U	0.6 U	0.53 U	0.53 U	0.52 U	0.53 U	0.54 U	0.5 U	0.53 U	0.59 U	0.6 U
TRANS-1,2-DICHLOROETHENE	2.3 U	2.6 U	2.7 U	2.6 U	2.8 U	3 U	2.7 U	2.7 U	2.6 U	2.6 U	2.7 U	2.5 U	2.6 U	2.9 U	3 U
TRICHLOROETHENE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U
VINYL CHLORIDE	0.93 U	1 U	1.1 U	1 U	1.1 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	1.1 U	0.99 U	1.1 U	1.2 U	1.2 U

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB15		21SB16	21SB17	21SB18		21SB19		21SB20	21SB21		21SB22	21SB23	21SB24	21SB25	
SAMPLE ID	21SB15-SO-0002	21SB15-SO-0002-D	21SB16-SO-0002	21SB17-SO-0002	21SB18-SO-0002	21SB18-0305	21SB19-SO-0001	21SB19-SO-0002	21SB20-SO-0002	21SB21-SO-0002	21SB21-0507	21SB22-SO-0002	21SB23-SO-0002	21SB24-SO-0002	21SB25-SO-0002	21SB25-SO-0002-D
SAMPLE DATE	20100915	20100915	20100915	20100915	20100915	20140327	20100915	20100915	20100915	20100915	20140325	20100915	20100916	20100916	20100916	20100916
SAMPLE CODE	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SB	SS	SS	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	1	1	3	1	1	3	0	2	2	3	5	2	1	2	2	2
BOTTOM DEPTH	3	3	5	3	3	5	1	4	4	5	7	4	3	4	4	4
METALS (MG/KG)																
ALUMINUM	10500	13100	4460	14400	11.8 U	NA	1830	5670	6910	4350	NA	5980	9710	12300	9410	9860
ANTIMONY	0.476 U	0.29 J	2.38 J	0.472 U	9.77 J	NA	1.09 U	0.459 U	0.459 U	93 J	NA	4.56 J	0.467 U	0.495 U	0.5 U	0.476 U
ARSENIC	4.66 J	5.91 J	6.45 J	7.16 J	2.64 J	NA	12.4 J	8 J	6.72 J	11.5 J	NA	18.5 J	2.84	6.21	5.07	5.12
BARIUM	88.6	111	240	87.1	475	NA	104	98.5	135	210	NA	242	134 J	139 J	75.7 J	88.3 J
BERYLLIUM	0.763 J	0.76	0.712 J	1.07 J	0.177 J	NA	0.718 J	0.905 J	0.844 J	0.643 J	NA	0.693 J	0.691	0.927	0.813	0.741
CADMIUM	0.574	2.38	1.61	0.673	13	NA	1.79	0.491	0.368 J	4.06	NA	3.75	0.313 J	1.12	0.337 J	0.296 J
CALCIUM	18900	20500	66800	98000	313000	NA	38500	1910	2020	61900	NA	54200	1850 J	9920 J	2040 J	6530 J
CHROMIUM	13.6	19.5	14.2	26.9	45.1	NA	10.1	16.9	12.7	18.4	NA	20.2	13.4	22	19.7	16.5
COBALT	27.9	12.3	6.59	9.69	3.96	NA	4.73	15.7	15	8.57	NA	9.56	11.5	16.8	14.1	16.2
COPPER	13.5	22.8	71.5	12.5	1280	NA	155	26.3	10.9	74.1	NA	141	9.96 J	35.2 J	13.3 J	12.4 J
IRON	14100	19600 J	12300	20000	5.88 U	NA	10200	29100	16600	22400	NA	45000	13000 J	34800 J	26400 J	20700 J
LEAD	9.78 J	43.8	284 J	18 J	1150 J	2600 J D	79.8 J	26.8 J	21.2 J	13900 J	29	490 J	13.9 J	29.1 J	72 J	17.5 J
MAGNESIUM	3320	3040	8590	9090	15900	NA	2230	646	752	5280	NA	4410	1230 J	2170 J	952 J	2110 J
MANGANESE	613	717 J	264	425	386	NA	184	463	1180	539	NA	918	372 J	393 J	1030 J	1710 J
MERCURY	0.0199 J	0.0699	0.069	0.0525	0.29	NA	0.159	0.058	0.0606	0.339	NA	0.114	0.0408	0.0448	0.0529	0.055
NICKEL	28.5	20.4 J	15.9	20.3	22.2	NA	11.8	18.8	17.2	15.9	NA	25.5	14.4	21.6	15.3	15.3
POTASSIUM	2250	1210	523 J	1410	399 J	NA	300 J	554 J	604	472 J	NA	624	736	831	677	760
SELENIUM	0.324 J	0.522 J	0.856 J	0.621 J	0.472 J	NA	1.25 J	0.718 J	0.809 J	1.11 J	NA	0.611 J	0.528 J	0.47 J	0.481 J	0.529 J
SILVER	0.0483 J	0.146 J	0.195 J	0.0406 J	0.617	NA	0.0818 J	0.044 J	0.0471 J	0.722	NA	0.215 J	0.234 U	0.248 U	0.25 U	0.238 U
SODIUM	304 U	312 U	291 U	323 U	294 U	NA	268 U	293 U	297 U	286 U	NA	287 U	296 U	288 U	289 U	289 U
THALLIUM	0.116 J	0.189 J	0.163 J	0.132 J	0.0503 J	NA	0.227 J	0.145 J	0.157 J	0.242 J	NA	0.128 J	0.208 J	0.182 J	0.241 J	0.22 J
VANADIUM	6.25	20	14.6	33.8	14.3	NA	12.2	20.4	17.2	16.6	NA	19.7	19.6	28.5	24.4	21.5
ZINC	36.3 J	79.6 J	225 J	38.3 J	1420 J	NA	169 J	75.2 J	42.9 J	257 J	NA	257 J	35.5 J	77.9 J	37.7 J	36.4 J
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0073 U	0.0075 U	0.007 U	0.0077 U	0.0071 UJ	NA	0.0068 U	0.007 UJ	0.0071 U	0.0069 UJ	NA	0.0069 U	0.0071 U	0.0069 U	0.0069 U	0.0069 U
AROCLOR-1221	0.0073 U	0.0075 U	0.007 U	0.0077 U	0.0071 UJ	NA	0.0068 U	0.007 UJ	0.0071 U	0.0069 UJ	NA	0.0069 U	0.0071 U	0.0069 U	0.0069 U	0.0069 U
AROCLOR-1232	0.0073 U	0.0075 U	0.007 U	0.0077 U	0.0071 UJ	NA	0.0068 U	0.007 UJ	0.0071 U	0.0069 UJ	NA	0.0069 U	0.0071 U	0.0069 U	0.0069 U	0.0069 U
AROCLOR-1242	0.0049 U	0.005 U	0.0047 U	0.0052 U	0.0047 UJ	NA	0.0045 U	0.0047 UJ	0.0048 U	0.0046 UJ	NA	0.0046 U	0.0047 U	0.0046 U	0.0046 U	0.0046 U
AROCLOR-1248	0.0036 U	0.0037 U	0.0035 U	0.0039 U	0.0035 UJ	NA	0.0034 U	0.0035 UJ	0.0036 U	0.0034 UJ	NA	0.0034 U	0.0036 U	0.0035 U	0.0035 U	0.0035 U
AROCLOR-1254	0.023	0.022	0.0047 U	0.0052 U	0.47 J	NA	0.0045 U	0.0047 UJ	0.0048 U	0.075 J	NA	0.0046 U	0.0077 J	0.0046 U	0.0046 U	0.032
AROCLOR-1260	0.0073 U	0.0075 U	0.007 U	0.0077 U	0.082 J	NA	0.0068 U	0.007 UJ	0.0071 U	0.088 J	NA	0.034	0.0071 U	0.031	0.0069 U	0.0069 U
TOTAL AROCLOR	0.023	0.022	0 U	0 U	0.552	NA	0 U	0 U	0 U	0.163	NA	0.034	0.0077	0.031	0 U	0.032
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.00095 J	0.0015 J	0.2 J	0.19	0.026	NA	3.9 J	0.031	0.016	0.4 J	NA	0.096	0.0098 U	0.0098 U	0.0096 U	0.0096 U
ACENAPHTHENE	0.01 U	0.01 U	0.044	0.026	0.012	NA	0.3	0.0014 J	0.0013 J	0.052	NA	0.021	0.0098 U	0.0022 J	0.00072 J	0.00074 J
ACENAPHTHYLENE	0.01 U	0.01 U	0.003 J	0.011 U	0.0098 U	NA	0.094 U	0.0097 U	0.0099 U	0.0095 U	NA	0.0095 U	0.0098 U	0.00092 J	0.0096 U	0.00065 J
ANTHRACENE	0.00079 J	0.00077 J	0.093	0.045	0.0059 J	NA	0.094 U	0.0026 J	0.0022 J	0.0095 U	NA	0.031	0.0012 J	0.0057 J	0.0011 J	0.0014 J
BAP EQUIVALENT-HALFND	0.0022839	0.0089088	0.14969	0.11631	0.105939	NA	0.9639	0.0109805	0.0141095	0.22421	NA	0.0203985	0.0114048	0.032106	0.0090727	0.016542
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.0012 J	0.0022 J	0.19 J	0.12 J	0.042 J	NA	1.2 J	0.0063 J	0.007 J	0.15 J	NA	0.061 J	0.0041 J	0.019	0.003 J	0.0068 J
BENZO(A)PYRENE	0.00093 J	0.003 J	0.11 J	0.073 J	0.066 J	NA	0.7 J	0.0047 J	0.0072 J	0.17 J	NA	0.0095 UJ	0.0049 J	0.021	0.0029 J	0.0087 J
BENZO(B)FLUORANTHENE	0.0014 J	0.0044 J	0.092 J	0.095 J	0.092 J	NA	0.52 J	0.0052 J	0.0073 J	0.15 J	NA	0.0095 UJ	0.0065 J	0.026	0.0054 J	0.016
BENZO(G,H,I)PERYLENE	0.01 U	0.0023 J	0.074 J	0.068 J	0.08 J	NA	0.46 J	0.0035 J	0.0052 J	0.17 J	NA	0.0095 UJ	0.0098 U	0.018	0.0096 U	0.0049 J
BENZO(K)FLUORANTHENE	0.0012 J	0.0035 J	0.085 J	0.091 J	0.058 J	NA	0.57 J	0.0043 J	0.0061 J	0.13 J	NA	0.0095 UJ	0.0098 U	0.018	0.0096 U	0.012
CHRYSENE	0.0019 J	0.0038 J	0.19 J	0.2 J	0.059 J	NA	1.2 J	0.0075 J	0.0085 J	0.16 J	NA	0.076 J	0.0058 J	0.026	0.0047 J	0.012
DIBENZO(A,H)ANTHRACENE	0.00092 J	0.01 U	0.0097 UJ	0.015 J	0.018 J	NA	0.094 UJ	0.0097 U	0.0099 UJ	0.0095 UJ	NA	0.0095 UJ	0.0098 U	0.0096 U	0.0096 U	0.0096 U
FLUORANTHENE	0.0024 J	0.0035 J	0.01	0.21	0.0098 UJ	NA	0.84	0.0068 J	0.009 J	0.0061 J	NA	0.051	0.0063 J	0.022	0.007 J	0.013
FLUORENE	0.01 U	0.00065 J	0.039	0.016	0.0077 J	NA	0.27	0.0017 J	0.002 J	0.1	NA	0.023	0.00068 J	0.0027 J	0.001 J	0.00087 J
INDENO(1,2,3-CD)PYRENE	0.0016 J	0.0021 J	0.056 J	0.057 J	0.079 J	NA	0.38 J	0.0023 J	0.0046 J	0.18 J	NA	0.042 J	0.0098 U	0.016	0.0096 U	0.0063 J
NAPHTHALENE	0.0012 J	0.0029 J	0.068 J	0.1 J	0.012 J	NA	1.8 J	0.016 J	0.006 J	0.19 J	NA	0.057 J	0.0098 U	0.0067 J	0.0096 U	0.0096 U
PHENANTHRENE	0.0029 J	0.0047 J	0.44 J	0.43 J	0.062 J	NA	4 J	0.022	0.019	0.47 J	NA	0.16	0.0073 J	0.03	0.0053 J	0.0063 J
PYRENE	0.0038 J	0.01 U	0.31 J	0.6 J	0.19 J	NA	2.7 J	0.008 J	0.016	0.26 J	NA	0.15 J	0.0061 J	0.043	0.0068 J	0.014
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
1,1,2,2-TETRACHLOROETHANE	1.1 UJ	1 U	0.94 UJ	1.6 UJ	1.1 UJ	NA	1.5 UJ	1.1 UJ	1.1 UJ	0.96 UJ	NA	0.95 UJ	1.1 U	1 U	0.94 U	0.9 U
1,1,2-TRICHLOROETHANE	2.6 U	2.5 U	2.4 U	4 U	2.7 U	NA	3.7 UJ	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 U	2.5 U	2.4 U	2.3 U
1,1-DICHLOROETHANE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
1,1-DICHLOROETHENE	2.6 U	2.5 U	2.4 U	4 U	2.7 U	NA	3.7 UJ	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 U	2.5 U	2.4 U	2.3 U
1,2-DICHLOROETHANE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
BENZENE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	0.58 J	1.1 U	1.1 U	0.91 J	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
CHLOROETHANE	2.6 U	2.5 UJ	2.4 U	4 U	2.7 U	NA	3.7 UJ	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 UJ	2.5 UJ	2.4 UJ	2.3 UJ
CHLOROMETHANE	1.1 UJ	1 U	0.94 UJ	1.6 UJ	1.1 UJ	NA	1.5 UJ	1.1 UJ	1.1 UJ	0.96 UJ	NA	0.95 UJ	1.1 U	1 U	0.94 U	0.9 U
CIS-1,2-DICHLOROETHENE	1.1 U	1 U	0.94 U	1.3 J	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	14	1.1 U	1 U	13 J	0.9 UJ
ETHYLBENZENE	2.6 U	2.5 U	2.4 U	4 U	2.7 U	NA	1.7 J	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 U	2.5 U	2.4 U	2.3 U
M+P-XYLENES	0.25 J	0.5 U	0.47 U	0.79 U	0.54 U	NA	1.3 J	0.55 U	0.54 U	0.48 U	NA	0.48 U	0.57 U	0.51 U	0.47 U	0.14 J
O-XYLENE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	0.74 J	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
TETRACHLOROETHENE	2.6 U	2.5 U	2.4 U	4 U	2.7 U	NA	3.7 UJ	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 U	2.5 U	2.4 U	2.3 U
TOLUENE	1.4 U	1 U	0.94 U	1.6 U	1.1 U	NA	3.1 J	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
TOTAL XYLENES	0.25 J	0.5 U	0.47 U	0.79 U	0.54 U	NA	2 J	0.55 U	0.54 U	0.48 U	NA	0.48 U	0.57 U	0.51 U	0.47 U	0.14 J
TRANS-1,2-DICHLOROETHENE	2.6 U	2.5 U	2.4 U	4 U	2.7 U	NA	3.7 UJ	2.8 U	2.7 U	2.4 U	NA	2.4 U	2.9 U	2.5 U	2.4 U	2.3 U
TRICHLOROETHENE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	0.95 U	1.1 U	1 U	0.94 U	0.9 U
VINYL CHLORIDE	1.1 U	1 U	0.94 U	1.6 U	1.1 U	NA	1.5 UJ	1.1 U	1.1 U	0.96 U	NA	4.3 J	1.1 U	1 U	7	0.9 U

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB26	21SB27				21SB28	21SB29	21SB30		21SB31	21SB32	21SB33	21SB34	
SAMPLE ID	21SB26-SO-0002	21SB27-SO-0002	21SB270204	21SB270204-D	21SB0270406	21SB28-SO-0002	21SB29-SO-0002	21SB30-SO-0002	21SB30-0305	21SB31-SO-0002	21SB32-SO-0002	21SB33-SO-0002	21SB34-SO-0002	21SB34-SO-0508
SAMPLE DATE	20100916	20100916	20120710	20120710	20120710	20100916	20100916	20100916	20140324	20100913	20100913	20100913	20100913	20100913
SAMPLE CODE	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SB	SS	SS	SS	SB	SS	SS	SS	SS	SB
TOP DEPTH	2	0	2	2	4	2	1	1	3	1	2	2	2	5
BOTTOM DEPTH	4	2	4	4	6	4	3	3	5	3	4	4	4	8
METALS (MG/KG)														
ALUMINUM	7410	7970	NA	NA	NA	5310	10400	7800	NA	9060	11600	11300	7770	8060
ANTIMONY	0.533 U	0.5 U	NA	NA	NA	1.41 J	0.463 U	10.4 J	NA	0.485 U	0.467 U	0.476 U	0.476 U	0.485 U
ARSENIC	9.12	3.1	NA	NA	NA	10.2	24.1	9.05	NA	4.57 J	9.29 J	5.71 J	5 J	13.7 J
BARIUM	197 J	233 J	NA	NA	NA	211 J	124 J	1390 J	NA	94.9	76.6	74.2	232	115
BERYLLIUM	1	0.609	NA	NA	NA	0.913	1.67	1.04	NA	0.976	0.982	0.6	0.817	1.49
CADMIUM	0.901	0.413 J	NA	NA	NA	1.57	0.54	6.36	NA	0.327 J	0.155 J	0.166 J	9.32	0.637
CALCIUM	5780 J	6630 J	NA	NA	NA	20100 J	1120 J	16400 J	NA	3450	1320	1320	10900	1200
CHROMIUM	26.9	13.9	NA	NA	NA	31.8	53.5	32.5	NA	11.2	14.4	13	18.3	41.8
COBALT	20.7	11.9	NA	NA	NA	18.7	23.9	17.2	NA	11.7	5.86	11.2	14.6	25.4
COPPER	151 J	11.2 J	NA	NA	NA	51 J	16.1 J	122 J	NA	13.4	10.7	8.85	39.2	12.6
IRON	32500 J	17800 J	NA	NA	NA	35700 J	90400 J	39000 J	NA	12600 J	19200 J	15900 J	21100 J	79300 J
LEAD	294 J	68 J	NA	NA	NA	681 J	25.1 J	1520 J	25 J	14.5	14	11.9	125	21.1
MAGNESIUM	962 J	1270 J	NA	NA	NA	4250 J	931 J	2650 J	NA	1020	1030	1120	1950	652
MANGANESE	1020 J	863 J	NA	NA	NA	1010 J	1570 J	1110 J	NA	1960 J	218 J	874 J	1160 J	831 J
MERCURY	0.0388 J	0.0382 J	NA	NA	NA	0.0547	0.0672	0.107	NA	0.0464	0.0429	0.0239 J	0.0646	0.0483
NICKEL	25.2	13.3	NA	NA	NA	22	41.3	25.1	NA	13.3	13.4	11.4	21.3	43.9
POTASSIUM	720	649	NA	NA	NA	469 J	752	722	NA	645	907	748	644	691
SELENIUM	0.566 J	0.456 J	NA	NA	NA	0.499 J	0.793 J	0.841 J	NA	0.617 J	0.589 J	0.514 J	0.672 J	0.619 J
SILVER	0.297 J	0.0423 J	NA	NA	NA	0.2 J	0.231 U	0.662	NA	0.0589 J	0.0636 J	0.238 U	0.0728 J	0.243 U
SODIUM	305 U	293 U	NA	NA	NA	275 U	278 U	289 U	NA	306 U	315 U	298 U	293 U	297 U
THALLIUM	0.169 J	0.234 J	NA	NA	NA	0.102 J	0.232 J	0.21 J	NA	0.18 J	0.255 J	0.17 J	0.142 J	0.17 J
VANADIUM	24.8	18.9	NA	NA	NA	22.7	45.4	21.7	NA	16.5 J	20.2 J	19.5 J	17.8 J	39.4 J
ZINC	260 J	45.7 J	NA	NA	NA	129 J	86.9 J	427 J	NA	40.6 J	33.6 J	29 J	181 J	113 J
MISCELLANEOUS PARAMETERS (S.U.)														
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.0073 U	0.007 U	0.139 U	0.0702 U	0.00711 U	0.0066 U	0.0067 U	0.0069 U	NA	0.0073 U	0.0076 U	0.0072 U	0.007 U	0.0071 U
AROCLOR-1221	0.0073 U	0.007 U	0.279 U	0.14 U	0.0142 U	0.0066 U	0.0067 U	0.0069 U	NA	0.0073 U	0.0076 U	0.0072 U	0.007 U	0.0071 U
AROCLOR-1232	0.0073 U	0.007 U	0.279 U	0.14 U	0.0142 U	0.0066 U	0.0067 U	0.0069 U	NA	0.0073 U	0.0076 U	0.0072 U	0.007 U	0.0071 U
AROCLOR-1242	0.0049 U	0.0047 U	0.093 U	0.0468 U	0.00474 U	0.0044 U	0.0044 U	0.0046 U	NA	0.0049 U	0.005 U	0.0048 U	0.0047 U	0.0047 U
AROCLOR-1248	0.0037 U	0.0035 U	0.0697 U	0.0351 U	0.00356 U	0.0033 U	0.0033 U	0.0035 U	NA	0.0037 U	0.0038 U	0.0036 U	0.0035 U	0.0036 U
AROCLOR-1254	0.0098 J	36 J	3.54 J	0.537 J	0.237	0.0044 U	0.022	0.078	NA	0.0049 U	0.005 U	0.0048 U	0.0047 U	0.0047 U
AROCLOR-1260	0.0073 U	2.6 J	0.139 U	0.0702 U	0.00711 U	0.021	0.0067 U	0.064	NA	0.0073 U	0.0076 U	0.0072 U	0.007 U	0.0071 U
TOTAL AROCLOR	0.0098	38.6	3.54	0.537	0.237	0.021	0.022	0.142	NA	0 U	0 U	0 U	0 U	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)														
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.01 U	0.019 U	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.00085 J	0.0099 UJ
ACENAPHTHENE	0.01 U	0.019 U	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0023 J
ACENAPHTHYLENE	0.00071 J	0.01 J	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
ANTHRACENE	0.0027 J	0.0075 J	NA	NA	NA	0.00053 J	0.0092 U	0.00094 J	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
BAP EQUIVALENT-HALFND	0.012204	0.17041	NA	NA	NA	0.0081157	0.0106267	0.018473	NA	0.01 U	0.01 U	0.0099 U	0.0112044	0.0111436
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.0089 J	0.069	NA	NA	NA	0.0021 J	0.0092 U	0.0079 J	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.002 J
BENZO(A)PYRENE	0.0072 J	0.11	NA	NA	NA	0.0023 J	0.0092 U	0.01	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
BENZO(B)FLUORANTHENE	0.013	0.18	NA	NA	NA	0.0055 J	0.0092 U	0.019	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
BENZO(G,H,I)PERYLENE	0.0065 J	0.1	NA	NA	NA	0.0091 U	0.0092 U	0.007 J	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
BENZO(K)FLUORANTHENE	0.0092 J	0.14	NA	NA	NA	0.0091 U	0.0092 U	0.013	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
CHRYSENE	0.012	0.11	NA	NA	NA	0.0052 J	0.00072 J	0.013	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.00094 J	0.0041 J
DIBENZO(A,H)ANTHRACENE	0.0021 J	0.023	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
FLUORANTHENE	0.02	0.11	NA	NA	NA	0.004 J	0.0092 U	0.0089 J	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0019 J
FLUORENE	0.0013 J	0.019 U	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0006 J	0.0099 UJ
INDENO(1,2,3-CD)PYRENE	0.0061 J	0.11	NA	NA	NA	0.0091 U	0.0092 U	0.0084 J	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
NAPHTHALENE	0.01 U	0.019 U	NA	NA	NA	0.0091 U	0.0092 U	0.0096 U	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0097 UJ	0.0099 UJ
PHENANTHRENE	0.019	0.02	NA	NA	NA	0.0057 J	0.0092 U	0.0077 J	NA	0.01 UJ	0.0018 J	0.0099 UJ	0.0016 J	0.0099 UJ
PYRENE	0.021	0.1	NA	NA	NA	0.0031 J	0.0092 U	0.01	NA	0.01 UJ	0.01 UJ	0.0099 UJ	0.0014 J	0.02 J
VOLATILES (UG/KG)														
1,1,1-TRICHLOROETHANE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
1,1,2,2-TETRACHLOROETHANE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 UJ	1.2 UJ	1 UJ	0.95 UJ	1.3 UJ
1,1,2-TRICHLOROETHANE	3.1 U	2.4 U	NA	NA	NA	2.7 U	2.6 U	2.5 U	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
1,1-DICHLOROETHANE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
1,1-DICHLOROETHENE	3.1 U	2.4 U	NA	NA	NA	2.7 U	2.6 U	2.5 U	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
1,2-DICHLOROETHANE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
BENZENE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
CHLOROETHANE	3.1 UJ	2.4 UJ	NA	NA	NA	2.7 UJ	2.6 UJ	2.5 UJ	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
CHLOROMETHANE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
CIS-1,2-DICHLOROETHENE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
ETHYLBENZENE	3.1 U	2.4 U	NA	NA	NA	2.7 U	2.6 U	2.5 U	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
M+P-XYLENES	0.63 U	0.48 U	NA	NA	NA	0.53 U	0.52 U	0.49 U	NA	0.56 U	0.6 U	0.51 U	0.47 U	0.63 U
O-XYLENE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
TETRACHLOROETHENE	3.1 U	2.4 U	NA	NA	NA	2.7 U	2.6 U	2.5 U	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
TOLUENE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.2 U	1.3 U	1.1 U	0.95 U	1.3 U
TOTAL XYLENES	0.63 U	0.48 U	NA	NA	NA	0.53 U	0.52 U	0.49 U	NA	0.56 U	0.6 U	0.51 U	0.47 U	0.63 U
TRANS-1,2-DICHLOROETHENE	3.1 U	2.4 U	NA	NA	NA	2.7 U	2.6 U	2.5 U	NA	2.8 U	3 U	2.5 U	2.4 U	3.1 U
TRICHLOROETHENE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U
VINYL CHLORIDE	1.3 U	0.95 U	NA	NA	NA	1.1 U	1 U	0.98 U	NA	1.1 U	1.2 U	1 U	0.95 U	1.3 U

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB35			21SB36				21SB37			21SB38		21SB39		21SB40	
SAMPLE ID	21SB35-SO-0002	21SB35-SO-0002-D	21SB35-SO-0507	21SB36-SO-0002	21SB0360204	21SB0360204-D	21SB36-SO-0207	21SB37-SO-0002	21SB37-SO-0002-D	21SB37-SO-0810	21SB38-SO-0002	21SB38-SO-0810	21SB39-SO-0002	21SB39-SO-0507	21SB40-SO-0002	21SB40-SO-0406
SAMPLE DATE	20100917	20100917	20100917	20100913	20120710	20120710	20100913	20100913	20100913	20100913	20100913	20100913	20100913	20100913	20100913	20100913
SAMPLE CODE	NORMAL	DUP	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SB	SB	SB	SS	SS	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH	4	4	5	0	2	2	2	4	4	8	4	8	2	5	1	4
BOTTOM DEPTH	6	6	7	2	4	4	7	6	6	10	6	10	4	7	3	6
METALS (MG/KG)																
ALUMINUM	5610	8280	4870	11.7 U	NA	NA	4970	7900	9450	8460	6390	5950	8150	9690	8480	11600
ANTIMONY	4.7 J	0.889 J	1.05 J	3.03 J	NA	NA	0.467 U	0.481 U	0.472 U	0.459 U	0.485 U	0.485 U	0.485 U	0.476 U	0.481 U	0.5 U
ARSENIC	13.3 J	24.7 J	17.8	1.87 J	NA	NA	4.22 J	15.9 J	5.15 J	12.1 J	6.96 J	8.37 J	4.68 J	10.4 J	13.4 J	16.4 J
BARIUM	123 J	161 J	96.7 J	175	NA	NA	88.4	105	117	106	110	86.7	88.4	80.8	60.8	77
BERYLLIUM	0.564	1.78	0.606	0.186 J	NA	NA	0.44 J	1.07	0.993	1.31	0.499	0.97	0.791	1.03	1.13	1.07
CADMIUM	32.4	33.3	72.7	23.1	NA	NA	0.388 J	0.283 J	0.442 J	0.836	2.73	0.379 J	0.241 J	0.345 J	0.31 J	0.352 J
CALCIUM	103000 J	19800 J	13500 J	277000	NA	NA	898	1950	2060	1120	30800	804	1410	1480	1600	2100
CHROMIUM	31 J	54.1 J	46.3	29.3	NA	NA	8.53	23.7	14.4	34.6	16.6	23.1	12.4	18.8	29	31.9
COBALT	12.6 J	24.7 J	14.2	4.59	NA	NA	7.77	17.3	11.9	30.2	9.28	13.6	12.5	15.7	15.7	18.3
COPPER	116 J	106 J	88 J	264	NA	NA	4.84	9.3	10.7	11	40.8	8.58	9.33	10.6	13.1	13.9
IRON	55100 J	124000 J	69700 J	5.84 UJ	NA	NA	16800 J	59600 J	17800 J	60200 J	19300 J	43700 J	14900 J	27900 J	44000 J	52800 J
LEAD	705 J	266 J	340 J	217	NA	NA	4.61	18.2	14.3	21.6	50.1	10.5	13.2	15.1	16.2	16.4
MAGNESIUM	3620 J	1740 J	1720 J	7090	NA	NA	641	784	1000	927	3710	559	843	1070	813	997
MANGANESE	584 J	1990 J	741 J	296 J	NA	NA	437 J	2280 J	450 J	2020 J	351 J	644 J	746 J	802 J	251 J	484 J
MERCURY	0.123	0.129	0.0889	0.375	NA	NA	0.0267 J	0.0369	0.0484	0.0513	0.382	0.0106 U	0.0521	0.0435	0.0735	0.0544
NICKEL	25 J	49.8 J	33.6	19.1	NA	NA	13.1	22	20.9	31.2	12.5	23.1	13.6	17.8	18.3	21.4
POTASSIUM	580 J	715	490 J	389 J	NA	NA	600	589	879	780	732	580	671	762	696	785
SELENIUM	0.894 J	0.886 J	0.649 J	0.53 J	NA	NA	0.22 J	0.691 J	0.835 J	0.493 J	0.385 J	0.397 J	0.598 J	0.678 J	0.36 J	0.397 J
SILVER	0.151 J	0.0878 J	0.0806 J	1.58	NA	NA	0.234 U	0.24 U	0.0964 J	0.229 U	0.291 J	0.243 U	0.243 U	0.238 U	0.24 U	0.25 U
SODIUM	1170 J	644 U	933 U	292 U	NA	NA	285 U	284 U	305 U	291 U	282 U	274 U	296 U	289 U	274 U	283 U
THALLIUM	0.176 J	0.226 J	0.131 J	0.0378 J	NA	NA	0.103 J	0.157 J	0.179 J	0.193 J	0.113 J	0.167 J	0.154 J	0.156 J	0.118 J	0.166 J
VANADIUM	23.8 J	48.4 J	18.5	5.06 J	NA	NA	13.4 J	42.5 J	18.2 J	34.2 J	14.9 J	22.4 J	16.5 J	22.4 J	34.7 J	31.1 J
ZINC	2230 J	1870 J	2680 J	1260 J	NA	NA	30.8 J	71.4 J	39.2 J	53.5 J	267 J	42.9 J	29.3 J	39.7 J	31.8 J	43.4 J
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0076 UJ	0.0077 UJ	0.0076 UJ	0.007 U	0.00726 U	0.0358 U	0.0068 U	0.0068 U	0.0073 U	0.007 U	0.0068 U	0.0066 U	0.0071 U	0.0069 U	0.0066 U	0.0068 U
AROCLOR-1221	0.0076 UJ	0.0077 UJ	0.0076 UJ	0.007 U	0.0145 U	0.0715 U	0.0068 U	0.0068 U	0.0073 U	0.007 U	0.0068 U	0.0066 U	0.0071 U	0.0069 U	0.0066 U	0.0068 U
AROCLOR-1232	0.0076 UJ	0.0077 UJ	0.0076 UJ	0.007 U	0.0145 U	0.0715 U	0.0068 U	0.0068 U	0.0073 U	0.007 U	0.0068 U	0.0066 U	0.0071 U	0.0069 U	0.0066 U	0.0068 U
AROCLOR-1242	0.0051 UJ	0.0051 UJ	0.0051 UJ	0.0047 U	0.00484 U	0.0238 U	0.0046 U	0.0046 U	0.0049 U	0.0723	0.16	0.1	0.0047 U	0.0046 U	0.0044 U	0.0045 U
AROCLOR-1248	0.0038 UJ	0.0038 UJ	0.0038 UJ	0.51 J	0.00363 U	0.0179 U	0.0034 U	0.0034 U	0.0037 U	0.034	0.088	0.049	0.0036 U	0.0035 U	0.0033 U	0.0034 U
AROCLOR-1254	0.47 J	0.14 J	0.1 J	1.7 J	0.00484 UJ	1.04 J	0.034 J	0.0046 U	0.0049 U	0.0047 U	0.065	0.023	0.0047 U	0.0046 U	0.0044 U	0.0045 U
AROCLOR-1260	0.11 J	0.058 J	0.029 J	0.4 J	0.00726 UJ	0.425 J	0.0081 J	0.0068 U	0.0073 U	0.007 U	0.014 J	0.0066 U	0.0071 U	0.0069 U	0.0066 U	0.0068 U
TOTAL AROCLOR	0.58	0.198	0.129	2.61	0 U	1.465	0.0421	0 U	0 U	0.1063	0.327	0.172	0 U	0 U	0 U	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.056 J	0.031 J	0.066	0.016 J	NA	NA	0.0009 J	0.0094 UJ	0.01 UJ	0.0097 UJ	0.16 J	0.0091 UJ	0.0012 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
ACENAPHTHENE	0.0096 J	0.006 J	0.017 J	0.02 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	0.87 J	0.0027 J	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
ACENAPHTHYLENE	0.005 J	0.0033 J	0.0041 J	0.15 UJ	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	0.7 UJ	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
ANTHRACENE	0.025	0.016	0.027 J	0.041 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.00095 J	1.3 J	0.0014 J	0.0006 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
BAP EQUIVALENT-HALFND	0.21536	0.116842	0.2477	0.37764	NA	NA	0.0105903	0.0094 U	0.01 U	0.0112743	5.2736	0.0101649	0.01094	0.0096 U	0.0091 U	0.0094 U
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.13 J	0.072 J	0.094 J	0.18 J	NA	NA	0.00091 J	0.0094 UJ	0.01 UJ	0.0055 J	3.4 J	0.0035 J	0.0011 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
BENZO(A)PYRENE	0.13 J	0.065 J	0.15 J	0.25 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	3.7 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
BENZO(B)FLUORANTHENE	0.18 J	0.1 J	0.24 J	0.27 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	4 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
BENZO(G,H,I)PERYLENE	0.16 J	0.11 J	0.18 J	0.25 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	2.2 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
BENZO(K)FLUORANTHENE	0.12 J	0.067 J	0.11 J	0.24 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	3 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
CHRYSENE	0.16 J	0.072 J	0.2 J	0.24 J	NA	NA	0.0018 J	0.0094 UJ	0.01 UJ	0.0058 J	3.6 J	0.0044 J	0.001 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
DIBENZO(A,H)ANTHRACENE	0.038 J	0.024 J	0.048 J	0.054 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	0.55 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
FLUORANTHENE	0.12 J	0.06 J	0.098	0.33 J	NA	NA	0.0017 J	0.0094 UJ	0.01 UJ	0.007 J	8.1 J	0.0098 J	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
FLUORENE	0.012	0.014	0.03 J	0.015 J	NA	NA	0.00075 J	0.0094 UJ	0.01 UJ	0.0097 UJ	0.7 J	0.0021 J	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
INDENO(1,2,3-CD)PYRENE	0.15 J	0.099 J	0.15 J	0.26 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	2.5 J	0.0021 J	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
NAPHTHALENE	0.02	0.014	0.025	0.014 J	NA	NA	0.0095 UJ	0.0094 UJ	0.01 UJ	0.0097 UJ	0.33 J	0.0091 UJ	0.0098 UJ	0.0096 UJ	0.0091 UJ	0.0094 UJ
PHENANTHRENE	0.13	0.083	0.18	0.18 J	NA	NA	0.0018 J	0.0094 UJ	0.01 UJ	0.0097 UJ	5.7 J	0.0091 UJ	0.0027 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
PYRENE	0.28 J	0.015 J	0.42 J	0.54 J	NA	NA	0.0054 J	0.00065 J	0.00088 J	0.024 J	6.4 J	0.015 J	0.0015 J	0.0096 UJ	0.0091 UJ	0.0094 UJ
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
1,1,2,2-TETRACHLOROETHANE	1.2 U	1.1 U	1.1 U	0.92 UJ	NA	NA	1 UJ	0.99 UJ	1 U	0.85 UJ	1.3 UJ	1.1 U	1.1 U	1 U	1.3 U	1.1 U
1,1,2-TRICHLOROETHANE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
1,1-DICHLOROETHANE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
1,1-DICHLOROETHENE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
1,2-DICHLOROETHANE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
BENZENE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
CHLOROETHANE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
CHLOROMETHANE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
CIS-1,2-DICHLOROETHENE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
ETHYLBENZENE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
M+P-XYLENES	0.59 U	0.53 U	0.54 U	0.46 U	NA	NA	0.51 U	0.49 U	0.52 U	0.42 U	0.66 U	0.54 U	0.53 U	0.5 U	0.64 U	0.57 U
O-XYLENE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
TETRACHLOROETHENE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
TOLUENE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	1.1 U	1 U	1.1 U	5.7 J	1.1 U	1.1 U	1 U	1.3 U	1.1 U
TOTAL XYLENES	0.59 U	0.53 U	0.54 U	0.46 U	NA	NA	0.51 U	0.49 U	0.52 U	0.42 U	0.66 U	0.54 U	0.53 U	0.5 U	0.64 U	0.57 U
TRANS-1,2-DICHLOROETHENE	3 U	2.6 U	2.7 U	2.3 U	NA	NA	2.5 U	2.5 U	2.6 U	2.1 U	3.3 U	2.7 U	2.6 U	2.5 U	3.2 U	2.8 U
TRICHLOROETHENE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U
VINYL CHLORIDE	1.2 U	1.1 U	1.1 U	0.92 U	NA	NA	1 U	0.99 U	1 U	0.85 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB41		21SB42		21SB43		21SB44	21SB45	21SB46		21SB47	21SB48		21SB49	21SB50	
SAMPLE ID	21SB41-SO-0002	21SB41-SO-0406	21SB42-SO-0002	21SB42-SO-0406	21SB43-SO-0002	21SB43-SO-0002-D	21SB44-SO-0002	21SB45-SO-0002	21SB46-SO-0002	21SB460204	21SB47-SO-0002	21SB48-SO-0002	21SB480204	21SB49-SO-0002	21SB50-SO-0002	21SB50-SO-0204
SAMPLE DATE	20100913	20100913	20100916	20100916	20100915	20100915	20100915	20100913	20100917	20120711	20100917	20100917	20120711	20100917	20100917	20100917
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SB	SS	SS	SS	SS	SS	SB	SS	SS	SB	SS	SS	SB
TOP DEPTH	1	4	1	4	1	1	3	1	0	2	0	0.5	2	0	2	2
BOTTOM DEPTH	3	6	3	6	3	3	5	3	2	4	1.5	1.5	4	2	4	4
METALS (MG/KG)																
ALUMINUM	10000	8470	11200	6900	8560	9150	9610	9400	9890	NA	7380	10500	NA	11600	12600	8550
ANTIMONY	0.476 U	0.476 U	0.472 U	0.463 U	0.5 U	0.476 UJ	0.722 U	0.481 U	0.467 U	NA	0.49 U	2.55 J	NA	0.5 U	0.459 U	0.495 U
ARSENIC	2.89 J	7.87 J	8.81	26.8	5.61 J	2.82 J	4.03 J	4.68 J	4.56 J	NA	7.68 J	10.5 J	NA	6.9 J	5.92	6.16
BARIUM	58.7	80.6	59.1 J	113 J	92.1	101	73.8	60.3	175	NA	113	208	NA	97.7	111 J	103 J
BERYLLIUM	0.626	0.856	0.674	1.35	1.04 J	0.733	0.701 J	0.604	0.649 J	NA	0.841 J	1.08 J	NA	0.872 J	0.978	0.981
CADMIUM	0.218 J	0.48	0.243 J	0.33 J	0.297 J	0.254 J	0.451 J	0.179 J	2.15	NA	0.716	8.34	NA	0.265 J	0.41 J	0.328 J
CALCIUM	7160	3060	3820 J	1470 J	2500	2770	34600	1690	12100	NA	2570	34400	NA	7830	5830 J	6560 J
CHROMIUM	13.9	19.5	21.3	28.6	26.6	14	16.6	18.4	15.3	NA	19.2	74.9	NA	16.5	18.4	16.9
COBALT	11.4	20.1	12.4	17.4	19.6	16.8	11.6	11.5	10.3	NA	16.4	19.4	NA	12.7	12.1	14.5
COPPER	9.08	12.1	25.3 J	12 J	11.4	9.43	16.6	7.73	105	NA	13	174	NA	15.1	10.7 J	8.24 J
IRON	15800 J	27800 J	24900 J	38000 J	20000	14000 J	22900	17600 J	13400	NA	25200	36100	NA	14600	24600 J	20600 J
LEAD	12.3	16.2	39.2 J	20.9 J	15.7 J	16.1	168 J	10.4	74.2 J	NA	24.9 J	400 J	NA	14.8 J	16.9 J	15 J
MAGNESIUM	1500	1470	1230 J	747 J	736	847	3670	1120	2720	NA	993	3140	NA	3200	2490 J	1420 J
MANGANESE	450 J	1560 J	399 J	1110 J	1700	2200 J	806	588 J	134	NA	1040	1170	NA	116	523 J	1580 J
MERCURY	0.0326 J	0.0212 J	0.05	0.046	0.0542	0.0492	0.0447	0.0349 J	0.0397	NA	0.045	0.0819	NA	0.0229 J	0.032 J	0.0529
NICKEL	9.94	16.5	14	25.3	15.8	13 J	15.2	10.6	29.1	NA	19.7	41.6	NA	31.1	19.8	20.9
POTASSIUM	600	434 J	831	630	481 J	498 J	660	536 J	2510	NA	616	1160	NA	2960	1040	626
SELENIUM	0.437 J	0.275 J	0.97 J	0.802 J	0.676 J	0.567 J	0.478 J	0.493 J	0.383 J	NA	0.608 J	0.72 J	NA	0.393 J	0.447 J	0.781 J
SILVER	0.238 U	0.0521 J	0.0596 J	0.231 U	0.0481 J	0.0419 J	0.24 U	0.24 U	0.0958 J	NA	0.0479 J	0.39 J	NA	0.0419 J	0.229 U	0.248 U
SODIUM	287 U	274 U	280 U	295 U	308 U	300 U	314 U	281 U	296 U	NA	289 U	358 U	NA	308 U	288 U	285 U
THALLIUM	0.188 J	0.148 J	0.213 J	0.142 J	0.207 J	0.194 J	0.162 J	0.186 J	0.115 J	NA	0.141 J	0.146 J	NA	0.153 J	0.163 J	0.168 J
VANADIUM	20.3 J	23.9 J	26.7	32.7	26.6	18.7	21.6	22.5 J	6.23	NA	20	21.3	NA	6.48	19.7	19.8
ZINC	30.4 J	40.4 J	38.5 J	56.4 J	33.3 J	32.8 J	66.3 J	25.9 J	324 J	NA	116 J	697 J	NA	27.5 J	31.1 J	39.6 J
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0069 U	0.0066 U	0.0067 U	0.0071 U	0.0074 UJ	0.0072 U	0.0075 UJ	0.0067 U	0.007 UJ	0.0066 U	0.0069 UJ	NA	0.00678 U	0.0074 U	0.0069 U	0.0068 U
AROCLOR-1221	0.0069 U	0.0066 U	0.0067 U	0.0071 U	0.0074 UJ	0.0072 U	0.0075 UJ	0.0067 U	0.007 UJ	0.0132 U	0.0069 UJ	0.0072 UJ	0.0136 U	0.0074 U	0.0069 U	0.0068 U
AROCLOR-1232	0.0069 U	0.0066 U	0.0067 U	0.0071 U	0.0074 UJ	0.0072 U	0.0075 UJ	0.0067 U	0.007 UJ	0.0132 U	0.0069 UJ	0.0072 UJ	0.0136 U	0.0074 U	0.0069 U	0.0068 U
AROCLOR-1242	0.0046 U	0.0044 U	0.0045 U	0.0047 U	0.0049 UJ	0.0048 U	0.005 UJ	0.0045 U	0.0046 UJ	0.0044 U	0.0046 UJ	0.0048 UJ	0.00452 U	0.0049 U	0.0046 U	0.0046 U
AROCLOR-1248	0.0034 U	0.0033 U	0.0034 U	0.0035 U	0.0037 UJ	0.0036 U	0.0038 UJ	0.0034 U	0.0035 UJ	0.0033 U	0.0035 UJ	0.0036 UJ	0.00339 U	0.0037 U	0.0035 U	0.0034 U
AROCLOR-1254	0.0046 U	0.0044 U	0.0045 U	0.0047 U	0.015 J	0.012 J	0.15 J	0.0045 U	2 J	0.0044 U	0.53 J	0.94 J	0.083	0.017 J	0.056 J	0.0046 U
AROCLOR-1260	0.0069 U	0.0066 U	0.0067 U	0.0071 U	0.0074 UJ	0.0072 U	0.033 J	0.0067 U	0.45 J	0.0351	0.17 J	0.24 J	0.0722	0.0074 U	0.022	0.0068 U
TOTAL AROCLOR	0 U	0 U	0 U	0 U	0.015	0.012	0.183	0 U	2.45	0.0351	0.7	1.18	0.1552	0.017	0.078	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.081 J	0.0029 J	0.0093 U	0.0098 U	0.0092 J	0.0012 J	0.1 UJ	0.00079 J	0.011	NA	0.039 J	0.15	NA	0.034	0.012 U	0.0095 U
ACENAPHTHENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.0021 J	0.0056 J	0.1 UJ	0.0093 UJ	0.0096 U	NA	0.14 U	0.0026 J	NA	0.0039 J	0.0015 J	0.00069 J
ACENAPHTHYLENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 U	0.1 UJ	0.0093 UJ	0.0015 J	NA	0.012 J	0.0094 J	NA	0.031 U	0.0096 U	0.0017 J
ANTHRACENE	0.0037 J	0.0091 UJ	0.0093 U	0.0098 U	0.0025 J	0.0017 J	0.0077 J	0.0093 UJ	0.0044 J	NA	2.6	0.029 J	NA	0.013 J	0.0039 J	0.0033 J
BAP EQUIVALENT-HALFND	0.0118545	0.0105126	0.0103984	0.0098 U	0.0116795	0.0115797	0.1114698	0.0107432	0.058618	NA	0.160291	0.03 U	NA	0.036987	0.016218	0.031622
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.013 J	0.0091 UJ	0.0012 J	0.0098 U	0.0062 J	0.0052 J	0.0096 J	0.0093 UJ	0.032	NA	0.071 J	0.03 UJ	NA	0.027 J	0.011 J	0.02
BENZO(A)PYRENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.032 J	NA	0.14 U	0.03 UJ	NA	0.031 UJ	0.01 J	0.021
BENZO(B)FLUORANTHENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.069 J	NA	0.14 U	0.03 UJ	NA	0.031 UJ	0.017 J	0.024
BENZO(G,H,I)PERYLENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.06 J	NA	0.056 J	0.03 UJ	NA	0.014 J	0.012 J	0.017 J
BENZO(K)FLUORANTHENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.046 J	NA	0.14 U	0.03 UJ	NA	0.031 UJ	0.011 J	0.02
CHRYSENE	0.057 J	0.0021 J	0.0019 J	0.0098 U	0.0095 J	0.0097 J	0.0098 J	0.0017 J	0.058	NA	0.091 J	0.03 UJ	NA	0.032	0.018 J	0.022
DIBENZO(A,H)ANTHRACENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.012 J	NA	0.14 UJ	0.03 UJ	NA	0.031 UJ	0.0023 J	0.0043 J
FLUORANTHENE	0.0095 UJ	0.0091 UJ	0.0018 J	0.0098 U	0.0066 J	0.01 U	0.1 UJ	0.0093 UJ	0.062	NA	0.1 J	0.03 U	NA	0.032	0.013	0.031
FLUORENE	0.013 J	0.00059 J	0.0093 U	0.0098 U	0.0033 J	0.009 J	0.1 UJ	0.0093 UJ	0.0013 J	NA	0.14 U	0.0037 J	NA	0.004 J	0.00091 J	0.0008 J
INDENO(1,2,3-CD)PYRENE	0.0095 UJ	0.0091 UJ	0.0093 U	0.0098 U	0.01 UJ	0.01 UJ	0.1 UJ	0.0093 UJ	0.04 J	NA	0.054 J	0.03 UJ	NA	0.031 UJ	0.0099 J	0.017 J
NAPHTHALENE	0.019 J	0.00083 J	0.0093 U	0.0098 U	0.0039 J	0.0013 J	0.1 UJ	0.0093 UJ	0.0063 J	NA	0.017 J	0.036 J	NA	0.011 J	0.0096 U	0.0095 U
PHENANTHRENE	0.074 J	0.003 J	0.0024 J	0.0098 U	0.019 J	0.0019 J	0.1 UJ	0.0022 J	0.037	NA	0.18	0.081	NA	0.085	0.029	0.019
PYRENE	0.058 J	0.0016 J	0.0019 J	0.0098 U	0.02 J	0.019 J	0.019 J	0.0022 J	0.1	NA	0.079 J	0.058 J	NA	0.033	0.033 J	0.032
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
1,1,2,2-TETRACHLOROETHANE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 UJ	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
1,1,2-TRICHLOROETHANE	2.6 U	2.4 U	2.3 U	2.6 U	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
1,1-DICHLOROETHANE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
1,1-DICHLOROETHENE	2.6 U	2.4 U	2.3 U	2.6 U	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
1,2-DICHLOROETHANE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
BENZENE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
CHLOROETHANE	2.6 U	2.4 U	2.3 UJ	2.6 UJ	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
CHLOROMETHANE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 UJ	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
CIS-1,2-DICHLOROETHENE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
ETHYLBENZENE	2.6 U	2.4 U	2.3 U	2.6 U	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
M+P-XYLENES	0.51 U	0.49 U	0.47 U	0.53 U	NA	NA	0.53 U	NA	NA	NA	NA	NA	NA	NA	0.46 U	0.46 U
O-XYLENE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
TETRACHLOROETHENE	2.6 U	2.4 U	2.3 U	2.6 U	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
TOLUENE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
TOTAL XYLENES	0.51 U	0.49 U	0.47 U	0.53 U	NA	NA	0.53 U	NA	NA	NA	NA	NA	NA	NA	0.46 U	0.46 U
TRANS-1,2-DICHLOROETHENE	2.6 U	2.4 U	2.3 U	2.6 U	NA	NA	2.6 U	NA	NA	NA	NA	NA	NA	NA	2.3 U	2.3 U
TRICHLOROETHENE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U
VINYL CHLORIDE	1 U	0.98 U	0.94 U	1.1 U	NA	NA	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.93 U	0.91 U

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB51	21SB52			21SB53			21SB54		21SB55				21SB56	21SB57	21SB58
SAMPLE ID	21SB51-SO-0002	21SB52-SO-0002	21SB52-SO-0608	21SB52-SO-0608-D	21SB53-SO-0002	21SB53-SO-0608	21SB53-SO-0608-D	21SB54-SO-0002	21SB54-SO-0608	21SB0550405	21SB550204	21SB55-SO-0002	21SB55-SO-0507	21SB56-0002	21SB57-0002	21SB58-0002
SAMPLE DATE	20100916	20100914	20100914	20100914	20100914	20100914	20100914	20100914	20100914	20120710	20120710	20100917	20100917	20110405	20110405	20110405
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SS	SB	SB	SS	SB	SB	SB	SS	SB	SS	SS	SS
TOP DEPTH	0	3.5	6	6	4	6	6	4	6	2	2	2	5	3	2.5	3
BOTTOM DEPTH	2	5.5	8	8	6	8	8	6	8	4	4	4	7	5	4.5	5
METALS (MG/KG)																
ALUMINUM	15800	13600	14400	13900	3780	10700	11400	15700	12800	NA	NA	6150	7150	NA	NA	NA
ANTIMONY	0.463 U	0.162 J	0.137 J	0.148 J	0.755 J	0.953 J	0.144 J	0.231 J	0.5 U	NA	NA	0.97 J	0.481 U	NA	NA	NA
ARSENIC	5.21 J	6.06 J	7.62 J	4.64 J	6.35 J	12.4 J	5.67 J	6.8 J	10.5 J	NA	NA	7.92	12.2	NA	NA	NA
BARIUM	133	46.1	62.1	51.8	48.2	65.9	83.6	94	73.6	NA	NA	140 J	78 J	NA	NA	NA
BERYLLIUM	0.914 J	0.406 J	0.608	0.493	0.34 J	0.836	1.02	0.688	1.09 J	NA	NA	0.608	1.65	NA	NA	NA
CADMIUM	0.595	0.387 J	0.415 J	0.356 J	4.1	0.583	0.352 J	0.404 J	0.446 J	NA	NA	6.4	0.489	NA	NA	NA
CALCIUM	4770	9230	565 J	518 J	176000	9840	6570	6540	1740	NA	NA	146000 J	911 J	NA	NA	NA
CHROMIUM	22.2	15.8	22.5	18.3	18.1	84 J	26 J	20.8	24.8	NA	NA	23.2	40	NA	NA	NA
COBALT	8.22	5.55	4.8	4.4	4.16	9.32	14.4	10.2	13.4	NA	NA	11.8	15.7	NA	NA	NA
COPPER	13.3	12.3	11.8	10.3	58.5	12.9	13	15.6	12.5	NA	NA	94.6 J	13.6 J	NA	NA	NA
IRON	25500	19800 J	23000 J	19200 J	12900 J	59100 J	36100 J	25800 J	45200	NA	NA	20700 J	86600 J	NA	NA	NA
LEAD	14.5 J	14.3	10.3	8.25	71.2	24.9 J	14 J	16.2	25.2 J	NA	NA	1180 J	18.3 J	10.9 J	106 J	22.2 J
MAGNESIUM	1930	2180	2250	2080	15100	1560	1470	2860	1900	NA	NA	3390 J	527 J	NA	NA	NA
MANGANESE	514	232 J	131 J	128 J	171 J	709 J	1930 J	584 J	854	NA	NA	1180 J	406 J	NA	NA	NA
MERCURY	0.0377	0.247	0.0116 U	0.0237 J	0.361	0.0579	0.0355 J	0.025 J	0.0344 J	NA	NA	0.433	0.0367	NA	NA	NA
NICKEL	17.8	8.85 J	10.3 J	8.69 J	13.8 J	14.3 J	18 J	14.8 J	19.7	NA	NA	21.3	36.2	NA	NA	NA
POTASSIUM	912	802	735	727	361 J	960	1310	1010	721	NA	NA	621	592	NA	NA	NA
SELENIUM	0.564 J	0.362 J	0.563 J	0.423 J	0.366 J	0.469 J	0.444 J	0.44 J	0.556 J	NA	NA	0.733 J	0.593 J	NA	NA	NA
SILVER	0.231 U	0.243 U	0.236 U	0.245 U	0.167 J	0.248 U	0.25 U	0.25 U	0.25 U	NA	NA	0.164 J	0.24 U	NA	NA	NA
SODIUM	305 U	299 U	309 U	302 U	374 U	327 U	314 U	318 U	325 U	NA	NA	435 U	295 U	NA	NA	NA
THALLIUM	0.185 J	0.198 J	0.228 J	0.221 J	0.24 U	0.149 J	0.204 J	0.308 J	0.255 J	NA	NA	0.128 J	0.122 J	NA	NA	NA
VANADIUM	23.7	26.6	31.2	24.1	9.55	55.3 J	20 J	25.6	32.3	NA	NA	14.2	33.5	NA	NA	NA
ZINC	49.4 J	41.2 J	33.7 J	30.3 J	479 J	63.9 J	44.9 J	47.8 J	39.1 J	NA	NA	740 J	76.5 J	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.7	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0073 UJ	0.0072 UJ	0.0074 U	0.0072 UJ	0.007 U	0.0079 U	0.0075 U	0.0076 U	0.0078 U	0.00695 UJ	0.0669 U	0.0069 U	0.0071 UR	NA	NA	NA
AROCLOR-1221	0.0073 UJ	0.0072 UJ	0.0074 U	0.0072 UJ	0.007 U	0.0079 U	0.0075 U	0.0076 U	0.0078 U	0.0139 UJ	0.134 U	0.0069 U	0.0071 UR	NA	NA	NA
AROCLOR-1232	0.0073 UJ	0.0072 UJ	0.0074 U	0.0072 UJ	0.007 U	0.0079 U	0.0075 U	0.0076 U	0.0078 U	0.0139 UJ	0.134 U	0.0069 U	0.0071 UR	NA	NA	NA
AROCLOR-1242	0.0049 UJ	0.58	0.0049 UJ	0.099 J	0.0047 U	0.0052 U	0.005 U	0.0051 U	0.0052 U	0.00463 UJ	0.0446 U	0.0046 U	0.0047 UR	NA	NA	NA
AROCLOR-1248	0.0037 UJ	0.32 J	0.0037 UJ	0.052 J	0.0035 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.122 J	0.0335 U	0.19 J	0.0035 UR	NA	NA	NA
AROCLOR-1254	0.017 J	0.47	0.0049 U	0.02 J	0.33	0.0052 U	0.0075 J	0.028	0.0052 U	0.114 J	0.932	0.82	0.073 J	NA	NA	NA
AROCLOR-1260	0.0073 UJ	0.71	0.0074 U	0.0072 UJ	0.13 J	0.0079 U	0.0075 U	0.0076 U	0.0078 U	0.00695 UJ	0.391	0.19	0.0071 UR	NA	NA	NA
TOTAL AROCLOR	0.017	2.08	0 U	0.171	0.46	0 U	0.0075	0.028	0 U	0.236	1.323	1.2	0.073	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.042	0.086	0.01 U	0.0014 J	97 U	0.0075 J	0.0032 J	0.0014 J	0.0013 J	NA	NA	0.0096 U	0.05	NA	NA	NA
ACENAPHTHENE	0.01 U	0.016	0.01 U	0.01 U	32 J	0.01 J	0.0039 J	0.011 U	0.011 U	NA	NA	0.0086 J	0.013	NA	NA	NA
ACENAPHTHYLENE	0.0009 J	0.0099 U	0.01 U	0.01 U	97 U	0.011 U	0.01 U	0.011 U	0.011 U	NA	NA	0.0096 U	0.0024 J	NA	NA	NA
ANTHRACENE	0.0016 J	0.006 J	0.01 U	0.01 U	19 J	0.005 J	0.0017 J	0.00065 J	0.001 J	NA	NA	0.0096 U	0.029	NA	NA	NA
BAP EQUIVALENT-HALFND	0.0116186	0.051205	0.01 U	0.0102567	77.768	0.015675	0.0066319	0.0068416	0.0043135	NA	NA	0.0096 U	0.25427	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.0056 J	0.04 J	0.01 U	0.00075 J	48 J	0.034 J	0.0045 J	0.0014 J	0.002 J	NA	NA	0.0096 U	0.15 J	NA	NA	NA
BENZO(A)PYRENE	0.01 UJ	0.028 J	0.01 U	0.01 U	21 J	0.011 UJ	0.005 J	0.00097 J	0.0022 J	NA	NA	0.0096 U	0.15 J	NA	NA	NA
BENZO(B)FLUORANTHENE	0.01 UJ	0.045 J	0.01 U	0.00096 J	23 J	0.011 UJ	0.0034 J	0.0013 J	0.0026 J	NA	NA	0.0096 U	0.18 J	NA	NA	NA
BENZO(G,H,I)PERYLENE	0.01 UJ	0.04 J	0.01 U	0.0016 J	7.3 J	0.011 UJ	0.0049 J	0.0011 J	0.0022 J	NA	NA	0.0096 UJ	0.18 J	NA	NA	NA
BENZO(K)FLUORANTHENE	0.01 UJ	0.037 J	0.01 U	0.00087 J	21 J	0.011 UJ	0.0023 J	0.0011 J	0.0021 J	NA	NA	0.0096 U	0.11 J	NA	NA	NA
CHRYSENE	0.0086 J	0.035 J	0.01 U	0.001 J	38 J	0.12 J	0.0089 J	0.0016 J	0.0025 J	NA	NA	0.0096 U	0.17 J	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	0.01 UJ	0.0099 UR	0.01 U	0.01 UJ	97 U	0.011 UJ	0.00056 J	0.011 U	0.0014 J	NA	NA	0.0096 U	0.05 J	NA	NA	NA
FLUORANTHENE	0.007 J	0.032 J	0.01 U	0.01 U	220	0.016	0.0086 J	0.0019 J	0.004 J	NA	NA	0.0026 J	0.15	NA	NA	NA
FLUORENE	0.0009 J	0.0099 U	0.01 U	0.01 U	35 J	0.017	0.0051 J	0.011 U	0.00067 J	NA	NA	0.0044 J	0.015	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	0.01 UJ	0.044 J	0.01 U	0.00076 J	9.2 J	0.011 UJ	0.0025 J	0.00089 J	0.0023 J	NA	NA	0.0096 UJ	0.2 J	NA	NA	NA
NAPHTHALENE	0.022 J	0.028	0.01 U	0.01 U	12 J	0.0032 J	0.0014 J	0.011 U	0.0012 J	NA	NA	0.0096 U	0.019	NA	NA	NA
PHENANTHRENE	0.023	0.07 J	0.01 U	0.0021 J	160	0.026	0.011	0.0037 J	0.0043 J	NA	NA	0.0029 J	0.14	NA	NA	NA
PYRENE	0.01	0.13 J	0.01 U	0.01 U	150	0.11 J	0.037 J	0.011 U	0.0045 J	NA	NA	0.011 J	0.34	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	0.89 UJ	0.98 UJ	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	2.2 U	2.4 U	2.8 U	3.8 U	3.9 U	2.9 U	3.8 UJ	2.9 U	NA	NA	3 U	2.6 U	NA	NA	NA
1,1-DICHLOROETHANE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
1,1-DICHLOROETHENE	NA	2.2 U	2.4 U	2.8 U	3.8 U	3.9 U	2.9 U	3.8 UJ	2.9 U	NA	NA	3 U	2.6 U	NA	NA	NA
1,2-DICHLOROETHANE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
BENZENE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
CHLOROETHANE	NA	2.2 U	2.4 U	2.8 U	3.8 UJ	3.9 UJ	2.9 U	3.8 UJ	2.9 UJ	NA	NA	3 U	2.6 U	NA	NA	NA
CHLOROMETHANE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
ETHYLBENZENE	NA	2.2 U	2.4 U	2.8 U	3.8 U	3.9 U	2.9 U	3.8 UJ	2.9 U	NA	NA	3 U	2.6 U	NA	NA	NA
M+P-XYLENES	NA	0.45 U	0.49 U	0.55 U	0.63 J	0.78 U	0.59 U	0.36 J	0.59 U	NA	NA	0.6 U	0.52 U	NA	NA	NA
O-XYLENE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
TETRACHLOROETHENE	NA	2.2 U	2.4 U	2.8 U	3.8 U	3.9 U	2.9 U	3.8 UJ	2.9 U	NA	NA	3 U	2.6 U	NA	NA	NA
TOLUENE	NA	0.89 U	0.99 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 U	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
TOTAL XYLENES	NA	0.45 U	0.49 U	0.55 U	0.63 J	0.78 U	0.59 U	0.36 J	0.59 U	NA	NA	0.6 U	0.52 U	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	2.2 U	2.4 U	2.8 U	3.8 U	3.9 U	2.9 U	3.8 UJ	2.9 U	NA	NA	3 U	2.6 U	NA	NA	NA
TRICHLOROETHENE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA
VINYL CHLORIDE	NA	0.89 U	0.98 U	1.1 U	1.5 U	1.6 U	1.2 U	1.5 UJ	1.2 U	NA	NA	1.2 U	1 U	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB59	21SB60		21SB61	21SB62	21SB63	21SB64	21SB65	21SB66		21SB66A	21SB67	21SB67A	21SB68		21SB68A
SAMPLE ID	21SB59-0002	21SB60-0002	21SB60-0002-D	21SB61-0002	21SB62-0002	21SB63-0002	21SB64-0002	21SB65-0002	21SB66-0002	21SB66-0507	21SB66A-0002	21SB67-0002	21SB67A-0002	21SB68-0002	21SB68-0507	21SB68A-0002
SAMPLE DATE	20110405	20110405	20110405	20110406	20110405	20110405	20110405	20110405	20110405	20140325	20110406	20110405	20110406	20110405	20140325	20110406
SAMPLE CODE	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SB	SS	SS	SS	SS	SB	SS
TOP DEPTH	3	3	3	0	3	3	3	3	4	5	4	4	3.5	3	5	3.5
BOTTOM DEPTH	5	5	5	2	5	5	5	5	5	7	5	5	5	5	7	5
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	37.8 J	42.2 J	35.1 J	464 J	53 J	177 J	30.5 J	147 J	2710 J	4.4	12.4 J	399 J	12.7 J	927 J	28	18.6 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	7.66	NA	NA	NA	NA	8.6	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB69		21SB70	21SB70A	21SB71		21SB72	21SB72A	21SB72B	21SB73		21SB74		
SAMPLE ID	21SB69-0002	21SB69-0507	21SB70-0002	21SB70A-0002	21SB71-0002	21SB71-0002-D	21SB72-0507	21SB72A-0002	21SB72B-0002	21SB73-0002	21SB73-0507	21SB740204	21SB74-0002	21SB74-0507
SAMPLE DATE	20110405	20140325	20110405	20110406	20110405	20110405	20110405	20110406	20110407	20110406	20110406	20120711	20110405	20110405
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SS	SS	SS	SB	SS	SS	SS	SB	SB	SS	SB
TOP DEPTH	4	5	2	3.5	2	2	5	2.5	3.5	0	5	2	3	5
BOTTOM DEPTH	5	7	4	5	4	4	5.9	4.5	5	2	7	4	5	7
METALS (MG/KG)														
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	1140 J	16	705 J	25.5 J	21.6 J	NA	347 J	265 J	166 J	189 J	14.8 J	NA	1340 J	15.1 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)														
PH	8.27	NA	7.9	NA	8.02	7.99	NA	NA	NA	NA	7.56	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00708 U	0.073 U	0.0069 U
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0142 U	0.15 U	0.014 U
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0142 U	0.15 U	0.014 U
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00472 U	0.61	0.0046 U
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00354 U	0.036 U	0.0034 U
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0119 J	2.6	0.0046 U
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00708 U	0.89	0.0069 U
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0119	4.1	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)														
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)														
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB75				21SB76		21SB77		21SB78	21SB79	21SB79A	21SB79B	21SB80	21SB81	21SB82	21SB83
SAMPLE ID	21SB75-0002	21SB75-0002-D	21SB75-0507	21SB75-0507-D	21SB76-0002	21SB76-0507	21SB77-0002	21SB77-0507	21SB78-0002	21SB79-0002	21SB79A-0002	21SB79B-0002	21SB80-0002	21SB81-0002	21SB82-0002	21SB83-0002
SAMPLE DATE	20110406	20110406	20110406	20110406	20110405	20110405	20110405	20110405	20110405	20110405	20110406	20110407	20110405	20110406	20110406	20110406
SAMPLE CODE	NORMAL	DUP	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SS	SB	SS	SB	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	5	5	3	5	4	5	3	2	3	3	3.5	0	0	0
BOTTOM DEPTH	2	2	7	7	5	7	6	7	5	4	5	5	5	2	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	42.3 J	52.2 J	16.9 J	20.6 J	23.2 J	21.1 J	19.3 J	13.9 J	21.9 J	NA	653 J	37.4 J	60.9 J	71.2 J	13.9 J	16.4 J
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	8.06	8.4	8.4	NA	8.03	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0071 U	0.0071 U	0.0071 UJ	0.0069 U	0.0071 U	0.0068 UJ	0.0071 UR	0.0069 UJ	NA	NA	NA	NA	NA	0.0072 UJ	0.007 U	0.0075 U
AROCLOR-1221	0.014 U	0.014 U	0.014 UJ	0.014 U	0.014 U	0.014 UJ	0.014 UR	0.014 UJ	NA	NA	NA	NA	NA	0.014 UJ	0.014 U	0.015 U
AROCLOR-1232	0.014 U	0.014 U	0.014 UJ	0.014 U	0.014 U	0.014 UJ	0.014 UR	0.014 UJ	NA	NA	NA	NA	NA	0.014 UJ	0.014 U	0.015 U
AROCLOR-1242	0.0047 U	0.0047 U	0.0047 UJ	0.0046 U	0.017 J	0.076 J	0.0047 UR	0.0046 UJ	NA	NA	NA	NA	NA	0.0048 UJ	0.0046 U	0.005 U
AROCLOR-1248	0.0035 U	0.0035 U	0.0035 UJ	0.0034 U	0.0035 U	0.0034 UJ	0.0035 UR	0.0034 UJ	NA	NA	NA	NA	NA	0.0036 UJ	0.0035 U	0.0038 U
AROCLOR-1254	0.0047 U	0.0047 U	0.0047 UJ	0.0046 U	0.03	0.1 J	0.088 J	0.053 J	NA	NA	NA	NA	NA	0.0048 UJ	0.0046 U	0.005 U
AROCLOR-1260	0.17	0.23	0.0071 UJ	0.0069 U	0.0071 U	0.0068 UJ	0.015 J	0.019 J	NA	NA	NA	NA	NA	0.081 J	0.007 U	0.0075 U
TOTAL AROCLOR	0.17	0.23	0 U	0 U	0.047	0.176	0.103	0.072	NA	NA	NA	NA	NA	0.081	0 U	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB84	21SB85	21SB86		21SB87	21SB88		21SB89		21SB90		21SB91	21SB92	21SB93		
SAMPLE ID	21SB84-0002	21SB85-0002	21SB86-0002	21SB86-0002-D	21SB87-0002	21SB88-0002	21SB880507	21SB89-0002	21SB0890507	21SB90-0002	21SB0900507	21SB91-0002	21SB92-0002	21SB93-0002	21SB0930406	21SB0930406-D
SAMPLE DATE	20110406	20110405	20110405	20110405	20110405	20110405	20120626	20110405	20120710	20110405	20120710	20110406	20110405	20110406	20120710	20120710
SAMPLE CODE	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SB	SS	SB	SS	SB	SS	SS	SS	SB	SB
TOP DEPTH	0	4.5	3	3	3	3	5	4	5	3	5	4	3	2.5	4	4
BOTTOM DEPTH	2	6.5	5	5	5	5	7	5	7	5	7	6	5	4.5	6	6
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	29.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0072 UJ	0.0068 U	0.007 U	0.0069 U	0.0072 U	0.036 U	0.00688 U	0.072 U	0.00703 U	0.072 U	0.00721 U	0.0071 U	0.036 U	1.4 UJ	0.0326 U	0.0331 U
AROCLOR-1221	0.014 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.072 U	0.0138 U	0.14 U	0.0141 U	0.14 U	0.0144 U	0.014 U	0.072 U	2.7 UJ	0.0652 U	0.0663 U
AROCLOR-1232	0.014 UJ	0.014 U	0.014 U	0.014 U	0.014 U	0.072 U	0.0138 U	0.14 U	0.0141 U	0.14 U	0.0144 U	0.014 U	0.072 U	2.7 UJ	0.0652 U	0.0663 U
AROCLOR-1242	0.0048 UJ	0.0046 U	0.0046 U	0.0046 U	0.0048 U	0.024 U	0.00458 U	0.048 U	0.00469 U	0.048 U	0.0048 U	0.0047 U	0.024 U	0.91 UJ	0.0217 U	0.0221 U
AROCLOR-1248	0.0036 UJ	0.0034 U	0.0035 U	0.0034 U	0.0036 U	0.018 U	0.00344 U	0.036 U	0.00352 U	0.036 U	0.0036 U	0.0035 U	0.018 U	0.68 UJ	0.0163 U	0.0166 U
AROCLOR-1254	0.17 J	0.17	0.17	0.28	0.0048 U	1.4	0.00458 U	2.2 J	0.00469 U	2.3 J	0.0195 J	0.037	0.4	40 J	0.464	0.361
AROCLOR-1260	0.0072 UJ	0.074	0.036	0.058	0.0072 U	0.036 U	0.00688 U	0.73 J	0.00703 U	0.8	0.00721 U	0.0071 U	0.087 J	1.4 UJ	0.0326 U	0.0331 U
TOTAL AROCLOR	0.17	0.244	0.206	0.338	0 U	1.4	0 U	2.93	0 U	3.1	0.0195	0.037	0.487	40	0.464	0.361
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB94		21SB95	21SB96	21SB97	21SB98	21SB99	21SB100	21SB101	21SB102	21SB103	21SB104			
SAMPLE ID	21SB94-0002	21SB940204	21SB95-0002	21SB96-0002	21SB97-0002	21SB98-0002	21SB99-0002	21SB100-0002	21SB101-0002	21SB102-0002	21SB103-0002	21SB104-0002	21SB104-0002-D	21SB104-0507	21SB104-0507-D
SAMPLE DATE	20110406	20120711	20110406	20110406	20110406	20110406	20110406	20110405	20110405	20110405	20110405	20110406	20110406	20110406	20110406
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	DUP
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SB	SB
TOP DEPTH	0	2	2.5	2.5	4.5	4	5	3.5	3	3	2.5	3.5	3.5	5	5
BOTTOM DEPTH	2	4	4	4.5	6.5	5	7	5	5	5	4.5	5.5	5.5	7	7
METALS (MG/KG)															
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)															
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)															
AROCLOR-1016	0.037 U	0.0675 U	0.035 U	0.0072 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	0.075 U	0.135 U	0.07 U	0.014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	0.075 U	0.135 U	0.07 U	0.014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	0.025 U	0.045 U	0.023 U	0.0048 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	0.019 U	0.0337 U	0.018 U	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	0.88	1.25	0.63 J	0.028	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	0.22	0.0675 U	0.31	0.0072 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	1.1	1.25	0.94	0.028	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)															
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	0.00143 J	0.00541 J	0.156 J	0.0109	0.0253	0.0149	0.434	0.00525 U	0.00524 U	0.00722 J	0.00597 J
ACENAPHTHENE	NA	NA	NA	NA	0.00505 U	0.0047 J	0.0673 J	0.00155 J	0.00226 J	0.00602 J	0.0165 J	0.00525 U	0.00524 U	0.00324 J	0.00203 J
ACENAPHTHYLENE	NA	NA	NA	NA	0.00505 U	0.005 U	0.0747 UJ	0.0051 U	0.00508 U	0.00481 U	0.0198 U	0.00525 U	0.00524 U	0.00492 U	0.00509 U
ANTHRACENE	NA	NA	NA	NA	0.00108 J	0.0108	0.0566 J	0.00261 J	0.00593 J	0.0134	0.0499	0.00525 U	0.00129 J	0.000691 J	0.000766 J
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	0.0062498	0.0148777	0.235059	0.0141927	0.0398439	0.034145	0.0653886	0.00525 U	0.0064708	0.0157329	0.0104852
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	0.00505 U	0.0168	0.133 J	0.00753 J	0.0402	0.0301	0.0783	0.00525 U	0.00524 U	0.00758 J	0.00488 J
BENZO(A)PYRENE	NA	NA	NA	NA	0.00505 U	0.00932 J	0.147 J	0.0083 J	0.0257 J	0.0224 J	0.0411	0.00525 U	0.00524 U	0.01	0.00563 J
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	0.00505 U	0.00494 J	0.178 J	0.0135	0.0386 J	0.0303 J	0.0271 J	0.00525 U	0.00524 U	0.0142	0.0091 J
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	0.00505 U	0.00418 J	0.0798 J	0.00609 J	0.0142 J	0.0142 J	0.0165 J	0.00525 U	0.00524 U	0.00313 J	0.00191 J
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	0.00505 U	0.00579 J	0.11 J	0.00886 J	0.0337 J	0.0214 J	0.0328 J	0.00525 U	0.00524 U	0.011	0.00642 J
CHRYSENE	NA	NA	NA	NA	0.00505 U	0.0118	0.209 J	0.0111	0.0569	0.031	0.0606	0.00525 U	0.00524 U	0.00788 J	0.00498 J
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	0.00505 U	0.005 U	0.0747 UJ	0.0051 U	0.00403 J	0.00359 J	0.0198 U	0.00525 U	0.00524 U	0.00492 U	0.00509 U
FLUORANTHENE	NA	NA	NA	NA	0.00189 J	0.00986 J	0.266 J	0.0121	0.0824	0.0541	0.0627	0.00525 U	0.00555 J	0.00753 J	0.00852 J
FLUORENE	NA	NA	NA	NA	0.00505 U	0.00396 J	0.117 J	0.00188 J	0.00329 J	0.00766 J	0.0219 J	0.00525 U	0.00524 U	0.00191 J	0.00121 J
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	0.00667 J	0.00814 J	0.183 J	0.0114	0.0184 J	0.0187 J	0.0346 J	0.00525 U	0.00678 J	0.00977	0.00843 J
NAPHTHALENE	NA	NA	NA	NA	0.00505 U	0.005 U	0.0747 U	0.00644 U	0.0129	0.0111	0.141	0.00525 U	0.00524 U	0.0199	0.0172
PHENANTHRENE	NA	NA	NA	NA	0.00505 U	0.0329	0.224 J	0.0139	0.0369	0.0541	0.262	0.00525 U	0.00524 U	0.00367 U	0.00509 U
PYRENE	NA	NA	NA	NA	0.00505 U	0.0283	0.807 J	0.0153	0.131	0.112	0.0781	0.00525 U	0.00308 J	0.0101	0.00753 J
VOLATILES (UG/KG)															
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB105		21SB106				21SB107	21SB108		21SB109			21SB111	21SB112	21SB113
SAMPLE ID	**21SB105-0002**	**21SB105-0507**	**21SB106-0002**	**21SB106-0507**	**21SB1060709**	**21SB1060709-D**	**21SB107-0002**	**21SB108-0002**	**21SB1080204**	**21SB109-0002**	**21SB1090204**	**21SB1090406**	**21SB111-0002**	**21SB112-0002**	**21SB113-0002**
SAMPLE DATE	**20110406**	**20110406**	**20110406**	**20110406**	**20120711**	**20120711**	**20110406**	**20110406**	**20120711**	**20110406**	**20120711**	**20140326**	**20110406**	**20110406**	**20110406**
SAMPLE CODE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**ORIG**	**DUP**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX	**SS**	**SB**	**SS**	**SB**	**SB**	**SB**	**SS**	**SS**	**SB**	**SS**	**SB**	**SB**	**SS**	**SS**	**SS**
TOP DEPTH	**3**	**5**	**3**	**5**	**7**	**7**	**0**	**0**	**2**	**0**	**2**	**4**	**3**	**3**	**3.5**
BOTTOM DEPTH	**5**	**7**	**5**	**7**	**9**	**9**	**2**	**2**	**4**	**2**	**4**	**6**	**5**	**5**	**5**
METALS (MG/KG)															
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)															
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)															
AROCLOR-1016	NA	NA	0.07 U	0.068 U	0.00699 U	0.00699 U	0.0073 U	0.035 U	0.00651 U	0.071 U	0.642	0.023 U	0.0074 U	0.0074 U	0.0074 U
AROCLOR-1221	NA	NA	0.14 U	0.14 U	0.014 U	0.014 U	0.015 U	0.071 U	0.013 U	0.14 U	0.139 U	0.023 U	0.015 U	0.015 U	0.015 U
AROCLOR-1232	NA	NA	0.14 U	0.14 U	0.014 U	0.014 U	0.015 U	0.071 U	0.013 U	0.14 U	0.139 U	0.015 U	0.015 U	0.015 U	0.015 U
AROCLOR-1242	NA	NA	1.8	2.1 J	0.00466 U	0.00466 U	0.0048 U	0.78 J	0.00434 U	1.1 J	0.0465 U	0.015 U	0.0049 U	0.0049 U	0.0049 U
AROCLOR-1248	NA	NA	0.035 U	0.034 U	0.00349 U	0.00349 U	0.0036 U	0.018 U	0.00325 U	0.036 U	0.449	0.023 U	0.0037 U	0.0037 U	0.0037 U
AROCLOR-1254	NA	NA	0.28	0.35 J	0.00466 U	0.024	0.18	0.58 J	0.217	0.92	0.0465 U	0.023 U	0.0049 U	0.0049 U	0.0049 U
AROCLOR-1260	NA	NA	0.15 J	0.19 J	0.00699 U	0.00699 U	0.088	0.54	0.101	0.49 J	0.0697 U	0.023 U	0.0074 U	0.0074 U	0.0074 U
TOTAL AROCLOR	NA	NA	2.23	2.64	0 U	0.024	0.268	1.9	0.318	2.51	1.091	0.02 U	0 U	0 U	0 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)															
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	8.22 J	0.277 J	0.152 J	0.272 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	17.1 J	0.13 J	0.0136 J	0.0188 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	0.457 J	0.151 UJ	0.0247 UJ	0.0238 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	23.4 J	0.405 J	0.013 J	0.0146 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	7.47229	0.608875	0.0782713	0.0962065	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	8.86 J	0.544 J	0.0378 J	0.0552 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	4.47 J	0.406 J	0.0485 J	0.0604 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	5.59 J	0.347 J	0.0603 J	0.0694 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	1.87 J	0.198 J	0.0442 J	0.06 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	4.27 J	0.239 J	0.0341 J	0.0462 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	8.59 J	0.585 J	0.0503 J	0.0645 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	0.72 J	0.151 UJ	0.0247 UJ	0.0139 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	41.4 J	2.48 J	0.0454 J	0.078 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	20.3 J	0.174 J	0.0213 J	0.0392 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	7.86 J	0.353 J	0.0722 J	0.0892 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	17.2 J	0.819 J	0.0701 J	0.0551 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	72.9 J	1.65 J	0.0911 J	0.125 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	25.4 J	2.47 J	0.142 J	0.222 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)															
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB115		21SB116		21SB117	21SB118			21SB119		21SB120		21SB121	21SB122	21SB123	
SAMPLE ID	21SB1150002	21SB1150002-D	21SB1160002	21SB1160305	21SB1170002	21SB1180002	21SB1180204	21SB1180204-D	21SB1190002	21SB1190204	21SB1200002	21SB1200305	21SB1210002	21SB1220002	21SB1230002	21SB1230204
SAMPLE DATE	20120306	20120306	20120306	20120710	20120306	20120306	20120626	20120626	20120306	20120626	20120306	20120710	20120306	20120307	20120307	20120711
SAMPLE CODE	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SS	SS	SB	SB	SS	SB	SS	SB	SS	SS	SS	SB
TOP DEPTH	0	0	1	3	0	0	2	2	0	2	1	3	0	0	0	2
BOTTOM DEPTH	2	2	3	5	2	2	4	4	2	4	3	5	2	2	2	4
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.035 U	0.069 U	0.035 U	0.00657 U	0.0065 U	0.071 U	0.00724 U	0.00718 U	0.34 U	0.00703 UJ	1.3 U	0.00713 U	0.0073 U	0.075 U	0.15 U	0.00665 U
AROCLOR-1221	0.069 U	0.14 U	0.07 U	0.0131 U	0.013 U	0.14 U	0.0145 U	0.0144 U	0.67 U	0.0141 UJ	2.7 U	0.0143 U	0.015 U	0.15 U	0.29 U	0.0133 U
AROCLOR-1232	0.069 U	0.14 U	0.07 U	0.0131 U	0.013 U	0.14 U	0.0145 U	0.0144 U	0.67 U	0.0141 UJ	2.7 U	0.0143 U	0.015 U	0.15 U	0.29 U	0.0133 U
AROCLOR-1242	0.023 U	0.046 U	0.023 U	0.00438 U	0.0043 U	0.047 U	0.00483 U	0.00479 U	0.22 U	0.00468 UJ	0.88 U	0.00475 U	0.0049 U	0.05 U	0.098 U	0.00444 U
AROCLOR-1248	0.017 U	0.035 U	0.017 U	0.00329 U	0.0033 U	0.035 U	0.00362 U	0.00359 U	0.17 U	0.00351 UJ	0.66 U	0.00357 U	0.0036 U	0.038 U	0.073 U	0.00333 U
AROCLOR-1254	0.61 J	1.1 J	1	0.0252	0.14	1.1 J	0.00483 U	0.00479 U	8.6 J	0.00983 J	31	0.0247	0.027	1.5	1.9	0.161
AROCLOR-1260	0.27	0.45	0.2	0.0173 J	0.14	0.37 J	0.00724 U	0.00718 U	2.6 J	0.00703 UJ	5.8	0.00713 U	0.027	0.36	0.79	0.00665 U
TOTAL AROCLOR	0.88	1.55	1.2	0.0425	0.28	1.47	0 U	0 U	11.2	0.00983	36.8	0.0247	0.054	1.86	2.69	0.161
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB125	21SB126	21SB127	21SB128		21SB129	21SB131		21SB132		21SB133		21SB135		21SB136	21SB137
SAMPLE ID	21SB1250002	21SB1260002	21SB1270002	21SB1280002	21SB1280305	21SB1290002	21SB1310002	21SB1310002-D	21SB1320002	21SB1320002-D	21SB1330002	21SB1330305	21SB1350002	21SB1350305	21SB1360002	21SB1370002
SAMPLE DATE	20120306	20120307	20120306	20120306	20120710	20120307	20120306	20120306	20120307	20120307	20120306	20120710	20120306	20120710	20120306	20120306
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SB	SS	SS	SS	SS	SS	SS	SB	SS	SB	SS	SS
TOP DEPTH	1	0	2	1	3	0	0	0	0	0	1	3	1	3	2	1
BOTTOM DEPTH	3	2	4	3	5	2	2	2	2	2	3	5	3	5	4	3
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0072 U	0.2 U	0.0075 U	0.071 U	0.00649 U	0.0075 U	0.036 U	0.035 U	0.0069 U	0.0074 U	0.069 U	0.00681 U	0.14 U	0.007 U	0.0073 U	0.036 U
AROCLOR-1221	0.014 U	0.39 U	0.015 U	0.14 U	0.013 U	0.015 U	0.072 U	0.07 U	0.014 U	0.015 U	0.14 U	0.0136 U	0.28 U	0.014 U	0.015 U	0.071 U
AROCLOR-1232	0.014 U	0.39 U	0.015 U	0.14 U	0.013 U	0.015 U	0.072 U	0.07 U	0.014 U	0.015 U	0.14 U	0.0136 U	0.28 U	0.014 U	0.015 U	0.071 U
AROCLOR-1242	0.0048 U	0.13 U	0.005 U	0.047 U	0.00432 U	0.005 U	0.024 U	0.023 U	0.0046 U	0.0049 U	0.046 U	0.00454 U	0.092 U	0.00467 U	0.0049 U	0.024 U
AROCLOR-1248	0.0036 U	0.098 U	0.0038 U	0.036 U	0.00324 U	0.0037 U	0.018 U	0.017 U	0.0035 U	0.0037 U	0.034 U	0.0034 U	0.069 U	0.0035 U	0.0037 U	0.018 U
AROCLOR-1254	0.06	2.4 J	0.005 U	1.7 J	0.00432 U	0.18	0.57 J	1.3 J	0.28 J	0.13 J	1.3	0.00454 U	4.8 J	0.239	0.12	0.52 J
AROCLOR-1260	0.022	0.55 J	0.0075 U	0.48 J	0.00649 U	0.051	0.18	0.29 J	0.11 J	0.065 J	0.54	0.00681 U	1.5 J	0.148	0.08	0.38
TOTAL AROCLOR	0.082	2.95	0 U	2.18	0 U	0.231	0.75	1.59	0.39	0.195	1.84	0 U	6.3	0.387	0.2	0.9
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB138	21SB139	21SB140		21SB141	21SB143	21SB144	21SB145				21SB146		21SB147	21SB148	
SAMPLE ID	21SB1380002	21SB1390002	21SB1400002	21SB1400204	21SB1410002	21SB1430002	21SB1440002	21SB1450002	21SB1450204	21SB1450406	21SB1450608	21SB1460002	21SB1460204	21SB1470002	21SB1480002	21SB1480204
SAMPLE DATE	20120306	20120307	20120306	20120710	20120307	20120306	20120306	20120307	20120711	20140326	20140326	20120307	20120711	20120306	20120307	20120711
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SS	SS	SS	SS	SB	SB	SB	SS	SB	SS	SS	SB
TOP DEPTH	3	0	0	2	0	0	0	0	2	4	6	0	2	1	0	2
BOTTOM DEPTH	5	2	2	4	2	2	2	2	4	6	8	2	4	3	2	4
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.0071 U	0.036 U	0.14 U	0.00679 U	0.0072 U	0.038 U	0.0073 U	0.15 U	0.0728 U	0.022 U	0.022 U	0.071 U	0.0365 U	0.0074 U	0.075 U	0.0347 U
AROCLOR-1221	0.014 U	0.072 U	0.28 U	0.0136 U	0.014 U	0.075 U	0.015 U	0.3 U	0.146 U	0.022 U	0.022 U	0.14 U	0.0731 U	0.015 U	0.15 U	0.0694 U
AROCLOR-1232	0.014 U	0.072 U	0.28 U	0.0136 U	0.014 U	0.075 U	0.015 U	0.3 U	0.146 U	0.015 U	0.014 U	0.14 U	0.0731 U	0.015 U	0.15 U	0.0694 U
AROCLOR-1242	0.0048 U	0.024 U	0.095 U	0.00452 U	0.0048 U	0.025 U	0.0049 U	0.1 U	0.0485 U	0.015 U	0.014 U	0.048 U	0.0244 U	0.005 U	0.05 U	0.0231 U
AROCLOR-1248	0.0036 U	0.018 U	0.071 U	0.00339 U	0.0036 U	0.019 U	0.0037 U	0.075 U	0.0364 U	0.022 U	0.025 J	0.036 U	0.0183 U	0.0037 U	0.037 U	0.433
AROCLOR-1254	0.0048 U	0.41	3.9 J	0.0134 J	0.2	0.53	0.052	2.8 J	1.28	0.011 J	0.022 U	1	0.582	0.06	1.2	0.305
AROCLOR-1260	0.0071 U	0.23 J	1.4 J	0.00679 U	0.096	0.37	0.024	1.7 J	0.615	0.022 U	0.022 U	0.52	0.32	0.022	0.88	0.191
TOTAL AROCLOR	0 U	0.64	5.3	0.0134	0.296	0.9	0.076	4.5	1.895	0.011 J	0.025 J	1.52	0.902	0.082	2.08	0.929
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB149		21SB150		21SB152	21SB155	21SB156	21SB157	21SB158	21SB159		21SB164	21SB165	21SB166	21SB171	21SB172
SAMPLE ID	21SB1490002	21SB1490204	21SB1500002	21SB1500002-D	21SB1520002	21SB1550002	21SB1560002	21SB1570002	21SB1580002	21SB1590002	21SB1590406	21SS1640002	21SS1650002	21SS1660002	21SS1710002	21SS1720002
SAMPLE DATE	20120307	20120711	20120307	20120307	20120306	20120306	20120306	20120306	20120306	20120306	20120710	20120710	20120711	20120711	20120710	20120711
SAMPLE CODE	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SS	SS	SS	SS	SS	SS	SS	SB	SS	SS	SS	SS	SS
TOP DEPTH	0	2	0	0	1	0	3	1	1	2	4	0	0	0	0	0
BOTTOM DEPTH	2	4	2	2	3	2	5	3	3	4	6	2	2	2	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.15 U	0.00655 U	0.0074 U	0.0071 U	0.014 U	0.016 U	0.0076 U	0.0078 U	0.0074 U	0.039 U	0.00786 U	0.0066 U	14 U	0.14 U	0.0075 U	1.53 U
AROCLOR-1221	0.29 U	0.0131 U	0.015 U	0.014 U	0.027 U	0.031 U	0.015 U	0.016 U	0.015 U	0.078 U	0.0157 U	0.013 U	28 U	0.29 U	0.015 U	3.06 U
AROCLOR-1232	0.29 U	0.0131 U	0.015 U	0.014 U	0.027 U	0.031 U	0.015 U	0.016 U	0.015 U	0.078 U	0.0157 U	0.013 U	28 U	0.29 U	0.015 U	3.06 U
AROCLOR-1242	0.098 U	0.00437 U	0.0049 U	0.0047 U	0.009 U	0.01 U	0.0051 U	0.0052 U	0.0049 U	0.026 U	0.00524 U	0.0044 U	9.4 U	0.097 U	0.005 U	1.02 U
AROCLOR-1248	0.074 U	0.00328 U	0.0037 U	0.0036 U	0.0068 U	0.0078 U	0.0038 U	0.0039 U	0.0037 U	0.02 U	0.00393 U	0.0033 U	7.1 U	0.072 U	0.0038 U	0.764 U
AROCLOR-1254	2.4	0.00437 U	0.058 J	0.12 J	0.12	0.18	0.0051 U	0.0052 U	0.21	1.2	0.00524 U	0.012 J	520	3.2	0.005 U	48.6
AROCLOR-1260	1.5	0.00655 U	0.039 J	0.067 J	0.014 U	0.15	0.0076 U	0.0078 U	0.1	0.24 J	0.00786 U	0.0066 U	14 U	0.14 U	0.022	1.53 U
TOTAL AROCLOR	3.9	0 U	0.097	0.187	0.12	0.33	0 U	0 U	0.31	1.44	0 U	0.012	520	3.2	0.022	48.6
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB173	21SB178	21SB179	21SB180	21SB185	21SB186		21SB187		21SB191	21SB192	21SB193	21SB194	21SB198		21SB199
SAMPLE ID	21SS1730002	21SS1780002	21SS1790002	21SS1800002	21SS1850002	21SS1860002	21SS1860002-D	21SS1870002	21SB1870204	21SS1910002	21SS1920002	21SS1930002	21SS1940002	21SS1980002	21SS1980002-D	21SS1990001
SAMPLE DATE	20120711	20120710	20120711	20120711	20120710	20120711	20120711	20120711	20120711	20120626	20120626	20120626	20120626	20120626	20120626	20120626
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SB	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	1
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.37 U	0.00704 U	0.0741 U	1.38 U	0.0068 U	3.23 U	7.01 U	0.335 U	0.343 U	0.00725 U	0.00723 UJ	0.344 U	1.36 U	0.00715 U	0.00722 U	3.2 U
AROCLOR-1221	0.739 U	0.0141 U	0.148 U	2.75 U	0.0136 U	6.45 U	14 U	0.671 U	0.685 U	0.0145 U	0.0145 UJ	0.688 U	2.71 U	0.0143 U	0.0144 U	6.4 U
AROCLOR-1232	0.739 U	0.0141 U	0.148 U	2.75 U	0.0136 U	6.45 U	14 U	0.671 U	0.685 U	0.0145 U	0.0145 UJ	0.688 U	2.71 U	0.0143 U	0.0144 U	6.4 U
AROCLOR-1242	0.246 U	0.00469 U	0.0494 U	0.918 U	0.00453 U	2.15 U	4.67 U	0.224 U	0.228 U	0.00483 U	0.00482 UJ	0.229 U	0.905 U	0.00477 U	0.00481 U	2.13 U
AROCLOR-1248	0.185 U	0.00352 U	0.0371 U	0.688 U	0.0034 U	1.61 U	3.5 U	0.168 U	0.171 U	0.00362 U	0.00362 UJ	0.172 U	0.679 U	0.00358 U	0.00361 U	1.6 U
AROCLOR-1254	11.7	0.00469 U	2.23	42.1	0.0157 J	117 J	259 J	4.55	5.01	0.00879 J	0.00482 UJ	7.28	31	0.00477 U	0.00481 U	44.5
AROCLOR-1260	0.37 U	0.00704 U	0.0741 U	1.38 U	0.0068 U	3.23 U	7.01 U	0.335 U	0.343 U	0.00725 U	0.00723 UJ	0.344 U	1.36 U	0.0443	0.0407	3.2 U
TOTAL AROCLOR	11.7	0 U	2.23	42.1	0.0157	117	259	4.55	5.01	0.00879	0 U	7.28	31	0.0443	0.0407	44.5
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB200	21SB207	21SB208	21SB209	21SB212		21SB213	21SB215	21SB217	21SB218	21SB219	21SB220	21SB221		21SB222	21SB223
SAMPLE ID	21SS2000002	21SS2070002	21SS2080002	21SS2090002	21SS2120002	21SS2120002-D	21SS2130002	21SS2150002	21SS2170002	21SS2180002	21SS2190002	21SS2200002	21SS2210002	21SB2210204	21SS2220002	21SS2230002
SAMPLE DATE	20120626	20120626	20120626	20120626	20120626	20120626	20120626	20120626	20140327	20140327	20140327	20140327	20140327	20140327	20140327	20140327
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SB	SS	SS
TOP DEPTH	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
BOTTOM DEPTH	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	120	44	1400	3300 D	610	110	750	280
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.334 U	0.00656 U	0.00672 U	0.00785 U	0.00685 U	0.00694 U	0.00667 U	0.00657 U	0.024 U	0.025 U	0.12 U	0.12 U	0.025 U	NA	0.052 U	0.023 U
AROCLOR-1221	0.669 U	0.0131 U	0.0134 U	0.0157 U	0.0137 U	0.0139 U	0.0133 U	0.0131 U	0.024 U	0.025 U	0.12 U	0.12 U	0.025 U	NA	0.052 U	0.023 U
AROCLOR-1232	0.669 U	0.0131 U	0.0134 U	0.0157 U	0.0137 U	0.0139 U	0.0133 U	0.0131 U	0.016 U	0.016 U	0.077 U	0.081 U	0.016 U	NA	0.034 U	0.015 U
AROCLOR-1242	0.223 U	0.00437 U	0.00448 U	0.00524 U	0.00456 U	0.00462 U	0.00445 U	0.00438 U	0.016 U	0.016 U	0.077 U	0.081 U	0.016 U	NA	0.034 U	0.015 U
AROCLOR-1248	0.167 U	0.00328 U	0.00336 U	0.00393 U	0.00342 U	0.00347 U	0.00334 U	0.00329 U	0.024 U	0.025 U	0.12 U	0.12 U	0.025 U	NA	0.052 U	0.023 U
AROCLOR-1254	9.05	0.00889 J	0.00448 U	0.0396	0.00456 UJ	0.0451 J	0.0119 J	0.00438 U	0.072	0.025 U	47	3.8 J	0.32	NA	1	0.023 U
AROCLOR-1260	0.334 U	0.00656 U	0.00672 U	0.024	0.00685 U	0.00694 U	0.00667 U	0.00657 U	0.042 J	0.025 U	0.12 U	1.9	0.15	NA	0.38	0.034 J
TOTAL AROCLOR	9.05	0.00889	0 U	0.0636	0 U	0.0451	0.0119	0 U	0.11	0.02 U	47	5.7	0.47	NA	1.4	0.034 J
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB224	21SB225	21SB226	21SB227		21SB228	21SB229	21SB230		21SB231	21SB232	21SB233	21SB234	21SB235	21SB236	21SB237
SAMPLE ID	21SS2240002	21SS2250002	21SS2260002	21SB2270204	21SB2270204A	21SB2280204	21SB2290204	21SS2300002	21SS2300002-	21SS2310002	21SS2320002	21SS2330002	21SS2340002	21SS2350002	21SS2360002	21SS2370002
SAMPLE DATE	20140327	20140327	20140327	20140328	20140328	20140328	20140328	20140324	20140327	20140324	20140324	20140324	20140327	20140324	20140327	20140324
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SB	SB	SB	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH	2	2	2	4	4	4	4	2	2	2	2	2	2	2	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	120	150 J	280	120	24	NA	20	110	18	230 J	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.024 U	0.024 U	0.024 U	0.022 U	NA	0.021 U	0.022 U	0.025 U	0.023 U	0.024 U	0.026 U	0.023 U	0.024 U	0.022 U	0.026 U	0.024 U
AROCLOR-1221	0.024 U	0.024 U	0.024 U	0.022 U	NA	0.021 U	0.022 U	0.025 U	0.023 U	0.024 U	0.026 U	0.023 U	0.024 U	0.022 U	0.026 U	0.024 U
AROCLOR-1232	0.016 U	0.016 U	0.015 U	0.014 U	NA	0.014 U	0.014 U	0.017 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U	0.015 U	0.017 U	0.016 U
AROCLOR-1242	0.016 U	0.016 U	0.015 U	0.014 U	NA	0.014 U	0.014 U	0.017 U	0.015 U	0.016 U	0.017 U	0.015 U	0.016 U	0.015 U	0.017 U	0.016 U
AROCLOR-1248	0.024 U	0.024 U	0.024 U	0.022 U	NA	0.021 U	0.022 U	0.025 U	0.023 U	0.024 U	0.026 U	0.023 U	0.024 U	0.022 U	0.026 U	0.024 U
AROCLOR-1254	0.024 U	0.056	0.19	0.74	NA	0.44	0.62	0.038 J	0.023 U	0.024 U	0.034 J	0.023 U	0.024 U	0.014 J	0.026 U	0.024 U
AROCLOR-1260	0.018 J	0.091 J	0.1 J	0.022 U	NA	0.021 U	0.022 U	0.018 J	0.023 U	0.043	0.052	0.023 U	0.17	0.051	0.2	0.024 U
TOTAL AROCLOR	0.018 J	0.15	0.29	0.74	NA	0.44	0.62	0.056	0.02 U	0.043 J	0.086	0.02 U	0.17	0.065	0.2	0.02 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB238	21SB239	21SB240		21SB241		21SB242	21SB243	21SB244	21SB245		21SB247	21SB248		21SB249	21SB250
SAMPLE ID	21SS2380002	21SS239-0002	21SS2400002	21SB240-0204	21SS2410002	21SB241-0204	21SS2420002	21SS2430002	21SS2440002	21SS2450002	21SB2450204	21SS2470002	21SS2480002	21SB2480204	21SS2490002	21SS2500002
SAMPLE DATE	20140327	20140325	20140325	20140325	20140325	20140325	20140327	20140324	20140327	20140327	20140327	20140327	20140327	20140327	20140324	20140327
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SS	SB	SS	SB	SS	SS	SS	SS	SB	SS	SS	SB	SS	SS
TOP DEPTH	0	0	0	2	0	2	0	0	0	0	2	0	0	2	0	0
BOTTOM DEPTH	2	2	2	4	2	4	2	2	2	2	4	2	2	4	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	20	840	190	180	17	420	NA	1600	260	87	NA	800	15	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.026 U	NA	0.021 U H	NA	NA	NA	0.024 U	0.021 U	0.024 U	0.025 U	NA	0.027 U	0.025 U	NA	0.025 U	0.051 U
AROCLOR-1221	0.026 U	NA	0.021 U H	NA	NA	NA	0.024 U	0.021 U	0.024 U	0.025 U	NA	0.027 U	0.025 U	NA	0.025 U	0.051 U
AROCLOR-1232	0.017 U	NA	0.014 U H	NA	NA	NA	0.016 U	0.014 U	0.016 U	0.016 U	NA	0.017 U	0.016 U	NA	0.016 U	0.033 U
AROCLOR-1242	0.017 U	NA	0.014 U H	NA	NA	NA	0.016 U	0.014 U	0.016 U	0.016 U	NA	0.017 U	0.016 U	NA	0.016 U	0.033 U
AROCLOR-1248	0.026 U	NA	0.021 U H	NA	NA	NA	0.024 U	0.021 U	0.024 U	0.025 U	NA	0.027 U	0.025 U	NA	0.025 U	0.051 U
AROCLOR-1254	0.026 U	NA	0.021 U H	NA	NA	NA	0.024 U	0.21	0.024 U	0.025 U	NA	0.027 U	0.025 U	NA	0.042	13 D
AROCLOR-1260	0.14	NA	0.99 H	NA	NA	NA	0.38	0.75	0.065 J	0.24	NA	0.083	0.025 U	NA	0.025 U	0.051 U
TOTAL AROCLOR	0.14	NA	0.99	NA	NA	NA	0.38	0.96	0.065	0.24	NA	0.083	0.02 U	NA	0.042 J	13
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB251	21SB252	21SB253	21SB257			21SB258			21SB259	21SB260
SAMPLE ID	21SS2510002	21SB2520204	21SB2530204	21SS2570002	21SB2570204	21SB257-0406	21SS258-0002	21SB2580204	21SB258-0406	21SB2590204	21SB2600204
SAMPLE DATE	20140324	20140324	20140324	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SB	SS	SB	SB	SS	SB	SB	SB	SB
TOP DEPTH	0	2	2	0	2	4	0	2	4	2	2
BOTTOM DEPTH	2	4	4	2	4	6	2	4	6	4	4
METALS (MG/KG)											
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	680	410	18	13	460	9.1	77	170
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)											
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)											
AROCLOR-1016	0.02 U J	0.024 U	0.023 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	0.02 U	0.024 U	0.023 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	0.013 U	0.015 U	0.015 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	0.013 U	0.015 U	0.015 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	0.02 U	0.024 U	0.023 U	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	4.5 D	0.18	0.48	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	0.78 J	0.024 U	0.023 U	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	5.3	0.18	0.48	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)											
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)											
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB261						21SB262					21SB263			21SB264	21SB265
SAMPLE ID	21SS2610002	21SS261-0002	21SB2610204	21SB261-0204	21SB2610406	21SB261-0406	21SS2620002	21SS262-0002	21SB2620204	21SB262-0204	21SB2620406	21SS2630002	21SB2630204	21SB2630406	21SS2640002	21SS2650002
SAMPLE DATE	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140325
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SB	SB	SB	SS	SS	SB	SB	SB	SS	SB	SB	SS	SS
TOP DEPTH	0	0	2	2	4	4	0	0	2	2	4	0	2	4	0	0
BOTTOM DEPTH	2	2	4	4	6	6	2	2	4	4	6	2	4	6	2	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	40	NA	360	NA	4.6	NA	390	NA	13	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.022 U	NA	0.023 U	NA	0.021 U	NA	0.025 U	NA	0.024 U	NA	0.023 U	0.093 U	0.024 U	0.022 U	0.024 U	0.024 U
AROCLOR-1221	0.022 U	NA	0.023 U	NA	0.021 U	NA	0.025 U	NA	0.024 U	NA	0.023 U	0.093 U	0.024 U	0.022 U	0.024 U	0.024 U
AROCLOR-1232	0.015 U	NA	0.015 U	NA	0.014 U	NA	0.016 U	NA	0.015 U	NA	0.015 U	0.061 U	0.016 U	0.014 U	0.016 U	0.016 U
AROCLOR-1242	0.015 U	NA	0.015 U	NA	0.014 U	NA	0.016 U	NA	0.015 U	NA	0.015 U	0.061 U	0.016 U	0.014 U	0.016 U	0.016 U
AROCLOR-1248	0.022 U	NA	0.023 U	NA	0.021 U	NA	0.025 U	NA	0.024 U	NA	0.023 U	0.093 U	0.024 U	0.022 U	0.024 U	0.024 U
AROCLOR-1254	0.49	NA	0.023 U	NA	0.021 U	NA	3 D	NA	0.024 U	NA	0.023 U	1.4	0.061	0.49	0.54	0.047
AROCLOR-1260	0.022 U	NA	0.023 U	NA	0.021 U	NA	0.13 U	NA	0.024 U	NA	0.023 U	0.8 J	0.038 J	0.022 U	0.39	0.073
TOTAL AROCLOR	0.49	NA	0.02 U	NA	0.02 U	NA	3	NA	0.02 U	NA	0.02 U	2.2	0.099	0.49	0.93	0.12
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB266	21SB267			21SB268			21SB270				21SB271			
SAMPLE ID	**21SS2660002**	**21SS2670002**	**21SB2670204**	**21SB2670406**	**21SS2680002**	**21SS268-0002**	**21SB268-0406**	**21SS2700002**	**21SB2700204**	**21SB2700406**	**21SB2700608**	**21SS2710002**	**21SB2710204**	**21SB2710406**	**21SB2710608**
SAMPLE DATE	**20140325**	**20140325**	**20140325**	**20140325**	**20140324**	**20140324**	**20140324**	**20140326**	**20140326**	**20140326**	**20140326**	**20140326**	**20140326**	**20140326**	**20140326**
SAMPLE CODE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**	**SO**
SAMPLE TYPE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX	**SS**	**SS**	**SB**	**SB**	**SS**	**SS**	**SB**	**SS**	**SB**	**SB**	**SB**	**SS**	**SB**	**SB**	**SB**
TOP DEPTH	**0**	**0**	**2**	**4**	**0**	**0**	**4**	**0**	**2**	**4**	**6**	**0**	**2**	**4**	**6**
BOTTOM DEPTH	**2**	**2**	**4**	**6**	**2**	**2**	**6**	**2**	**4**	**6**	**8**	**2**	**4**	**6**	**8**
METALS (MG/KG)															
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	59	76	26 J	25 D	NA	300	12	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)															
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)															
AROCLOR-1016	NA	NA	NA	NA	0.025 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	0.025 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	0.016 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	0.016 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	0.025 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	0.69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)															
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	0.0039 J	0.0049 J	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	0.0038 J	0.004 J	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	0.005663	0.0059117	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	0.002076	0.0040247	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	0.0096	0.0041 J	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0032 J	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0041 J M	0.004 U M	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	0.015	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U M	0.37 U	0.35 U M	0.38 U	0.075 U	0.36 U
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	0.016	0.0047 J	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	0.018	0.0043 J	0.004 U	0.37 U	1.2 D	0.38 U	0.075 U	0.36 U
FLUORENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	0.011	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	0.0034 U	0.0034 U	0.004 U	0.37 U	0.35 U	0.38 U	0.075 U	0.36 U
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	0.013	0.01	0.0056 J	0.37 U	0.96 D	0.38 U	0.075 U	0.36 U
PYRENE	NA	NA	NA	NA	NA	NA	NA	0.02	0.0053 J	0.004 U	0.37 U	0.89 D	0.38 U	0.075 U	0.36 U
VOLATILES (UG/KG)															
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB272			21SB273			21SB276		21SB280	21SB281	21SB282	21SB283	21SB289	21SB290		21SB291
SAMPLE ID	21SS2720002	21SB2720204	21SB2720406	21SS2730002	21SS2730204	21SS2730406	21SS2760002	21SB2760204	21SS280-0002	21SS2810002	21SS2820002	21SS2830002	21SS2890002	21SB2900002	21SB2900204	21SS2910002
SAMPLE DATE	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140327	20140324	20140324	20140327	20140327	20140325	20140327
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SB	SS	SB	SB	SS	SB	SS	SS	SS	SS	SS	SS	SB	SS
TOP DEPTH	0	2	4	0	2	4	0	2	0	0	0	0	0	0	2	0
BOTTOM DEPTH	2	4	6	2	4	6	2	4	2	2	2	2	2	2	4	2
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	120	NA	NA	NA	790	2300 D	210	290
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.025 U	0.023 U	0.021 U	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.025 U	0.023 U	0.021 U	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016 U	0.015 U	0.014 U	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.016 U	0.015 U	0.014 U	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.025 U	0.023 U	0.021 U	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.61	0.67	0.021 U	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.025 U	0.023 U	0.12	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.61	0.67	0.12	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	0.62	0.012	0.004 J	0.25	0.91	4	0.22 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	0.57	0.011	0.0043 U	0.2	0.67	3.2	0.36 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	0.037 J	0.004 U	0.0043 U	0.034 U	0.074	0.036 U	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	0.042 J	0.004 U	0.0043 U	0.034 U	0.06 J	0.036 U	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	0.13	0.004 U	0.0043 U	0.044 J	0.32	0.45	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	0.38358	0.0055371	0.006827	0.14981	0.23142	0.45977	0.160067	0.009522	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	0.36608	0.0031171	0.004247	0.13281	0.21392	0.45797	0.137077	0.0069	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	0.33	0.004 U	0.0043 U	0.13	0.43	0.82	0.07 J D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	0.26	0.0027 J	0.0031 J	0.1	0.14	0.27	0.038 U	0.0069 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	0.63	0.0041 J	0.011	0.14	0.25	0.49	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	0.1 J	0.004 UJ	0.0043 UJ	0.067 J	0.1 J	0.073 J	0.049 J D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	0.18	0.004 U	0.0034 J	0.054 J	0.063 J	0.1	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	0.48	0.0071 J	0.013	0.17	0.49	0.97	0.077 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	0.035 U	0.004 U	0.0043 U	0.034 UJ	0.035 UJ	0.055 J	0.13 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	0.77	0.005 J	0.03	0.22	0.49	0.95	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	0.045 J	0.0041 J	0.0043 U	0.034 U	0.15	0.036 U	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	0.078 J	0.004 UJ	0.0043 UJ	0.051 J	0.048 J	0.036 UJ	0.038 U	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	0.34	0.0054 J	0.0043 U	0.089	0.18	1.1	0.12 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	1	0.014	0.018	0.42	2	4.8	0.24 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	0.71	0.017	0.023	0.21	0.7	1.1	0.12 D	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB292	21SB293	21SB294	21SB295			21SB297			21SB298		21SB299		21SB300	
SAMPLE ID	21SB2920204	21SB2930204	21SS2940002	21SS2950002	21SB2950204	21SB295-0406	21SS2970002	21SB2970204	21SB297-0406	21SS298-0002	21SB2980204	21SS299-0002	21SB299-0204	21SS3000002	21SB3000406
SAMPLE DATE	20140327	20140327	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140326	20140326
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SB	SB	SS	SS	SB	SB	SS	SB	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH	2	2	0	0	2	4	0	2	4	0	2	0	2	0	4
BOTTOM DEPTH	4	4	2	2	4	6	2	4	6	2	4	2	4	2	6
METALS (MG/KG)															
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	200	370	350 D	310	850	31 D	280	5600 D	27	54	190	100	96	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)															
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)															
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	0.023 U
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	0.023 U
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.015 U	0.015 U
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.015 U	0.015 U
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	1
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	0.071 J
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022 U	0.14
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	1.2
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)															
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)															
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION		21SB301			21SB304		21SB305		21SB306	21SB307		21SB309		21SB311	21SB315	
SAMPLE ID	21SS3010002	21SB3010204	21SB3010406	21SS3040002	21SB3040204	21SB3040406	21SS3050002	21SB3050204	21SS3060002	21SS3070002	21SS3090002	21SB3090204	21SB3090406	21SB311-0204	21SB3150002	21SB3150406
SAMPLE DATE	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140326	20140324	20140324	20140326	20140326	20140326	20140326	20140326	20140326
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SB	SS	SB	SB	SS	SB	SS	SS	SS	SB	SB	SB	SS	SB
TOP DEPTH	0	2	4	0	2	4	0	2	0	0	0	2	4	2	0	4
BOTTOM DEPTH	2	4	6	2	4	6	2	4	2	2	2	4	6	4	2	6
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	0.026 U	0.023 U	0.023 U	0.026 U	0.023 U	0.023 U	0.024 U	0.022 U	0.024 U	0.025 U	0.026 U	0.023 U	0.024 U	NA	0.024 U	0.023 U
AROCLOR-1221	0.026 U	0.023 U	0.023 U	0.026 U	0.023 U	0.023 U	0.024 U	0.022 U	0.024 U	0.025 U	0.026 U	0.023 U	0.024 U	NA	0.024 U	0.023 U
AROCLOR-1232	0.017 U	0.015 U	0.015 U	0.017 U	0.015 U	0.015 U	0.016 U	0.015 U	0.016 U	0.016 U	0.017 U	0.015 U	0.015 U	NA	0.015 U	0.015 U
AROCLOR-1242	0.017 U	0.015 U	0.015 U	0.017 U	0.015 U	0.015 U	0.016 U	0.015 U	0.016 U	0.016 U	0.017 U	0.015 U	0.015 U	NA	0.015 U	0.015 U
AROCLOR-1248	0.026 U	8.5 D	0.023 U	0.026 U	0.023 U	0.023 U	0.024 U	0.022 U	0.024 U	0.025 U	0.026 U	0.023 U	0.024 U	NA	0.024 U	0.023 U
AROCLOR-1254	0.081	14 D	0.023 U	1.1 J	0.023 U	0.11	0.11	0.022 U	0.046 J	0.34	0.026 U	0.023 U	0.024 U	NA	0.024 U	0.023 U
AROCLOR-1260	0.02 J	0.023 U	0.023 U	0.69	0.21	0.059 J	0.15	0.022 U	0.048	0.31	0.026 U	0.023 U	0.024 U	NA	0.024 U	0.023 U
TOTAL AROCLOR	0.1	23	0.02 U	1.8	0.21	0.17	0.26	0.02 U	0.094	0.65	0.02 U	0.02 U	0.02 U	NA	0.02 U	0.02 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB317		21SB318	21SB320	21SB321			21SB322					21SB324			
SAMPLE ID	21SS317-0002	21SB317-0204	21SS318-0002	21SS3200002	21SS3210002	21SB3210204	21SB3210608	21SS3220002	21SS3220002-D	21SB3220204	21SB3220204-D	21SB3220406	21SS3240002	21SB3240204	21SB3240406	21SB3240608
SAMPLE DATE	20140326	20140326	20140326	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140325	20140326	20140326	20140326	20140326
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	DUP	ORIG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SB	SS	SS	SS	SB	SB	SS	SS	SB	SB	SB	SS	SB	SB	SB
TOP DEPTH	0	2	0	0	0	2	6	0	0	2	2	4	0	2	4	6
BOTTOM DEPTH	2	4	2	2	2	4	8	2	2	4	4	6	2	4	6	8
METALS (MG/KG)																
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	27	110	51	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)																
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)																
AROCLOR-1016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1221	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1232	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1242	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AROCLOR-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL AROCLOR	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)																
1-METHYLNAPHTHALENE	NA	NA	NA	NA	0.0036 J	0.0039 U	0.0038 U	0.21	0.32	0.0097	0.0038 J	0.0041 U	0.034 U	0.047 J D	0.0043 U	0.039 U
2-METHYLNAPHTHALENE	NA	NA	NA	NA	0.0044 J	0.0039 U	0.0038 U	0.21 J	0.39 J	0.013	0.0053 J	0.0041 U	0.034 U	0.052 J D	0.0043 U	0.039 U
ACENAPHTHENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.035 U	0.034 U	0.0037 U	0.0038 U	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
ACENAPHTHYLENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.035 U	0.034 U	0.0037 U	0.0038 U	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
ANTHRACENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.053 J	0.072	0.008	0.0038 U	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	0.0097344	0.0295565	0.0049909	0.16517	0.16972	0.038704	0.0101375	0.0041 U	0.043639	0.062616	0.0043 U	0.039 U
BAP EQUIVALENT-POS	NA	NA	NA	NA	0.0075074	0.027	0.0025	0.14767	0.15272	0.038704	0.0080475	0.0041 U	0.006069	0.037071	0.0043 U	0.039 U
BENZO(A)ANTHRACENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.12	0.16	0.017	0.005 J	0.0041 U	0.06 J D	0.039 U	0.0043 U	0.039 U
BENZO(A)PYRENE	NA	NA	NA	NA	0.0075 J	0.027	0.0025 J	0.11	0.11	0.027 J	0.0063 J	0.0041 U	0.034 U	0.037 J D	0.0043 U	0.039 U
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	0.0034 UJ	0.0039 U	0.0038 U	0.21	0.19	0.054 J	0.012 J	0.0041 U	0.034 U	0.039 U M	0.0043 U	0.039 U
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	0.0034 UJ	0.0039 UJ	0.0038 UJ	0.042 J	0.069 J	0.011 J	0.0038 UJ	0.0041 UJ	0.034 U	0.039 U	0.0043 U	0.039 U
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	0.0034 UJ	0.0039 U	0.0038 U	0.06 J	0.066 J	0.018	0.0041 J	0.0041 U	0.034 U	0.039 U M	0.0043 U	0.039 U
CHRYSENE	NA	NA	NA	NA	0.0074	0.0039 U	0.0038 U	0.17	0.16	0.024 J	0.0065 J	0.0041 U	0.069 J D	0.071 J D	0.0043 U	0.039 U
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	0.0034 UJ	0.0039 UJ	0.0038 UJ	0.035 U	0.034 UJ	0.0037 J	0.0038 U	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
FLUORANTHENE	NA	NA	NA	NA	0.0075	0.0039 U	0.0038 U	0.18	0.2	0.037 J	0.011 J	0.0041 U	0.1 D	0.066 J D	0.0043 U	0.039 U
FLUORENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.035 U	0.034 U	0.0037 U	0.0038 U	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	0.0034 UJ	0.0039 UJ	0.0038 UJ	0.039 J	0.069 J	0.007 J	0.0038 UJ	0.0041 UJ	0.034 U	0.039 U	0.0043 U	0.039 U
NAPHTHALENE	NA	NA	NA	NA	0.0034 U	0.0039 U	0.0038 U	0.12	0.19	0.0087	0.0044 J	0.0041 U	0.034 U	0.039 U	0.0043 U	0.039 U
PHENANTHRENE	NA	NA	NA	NA	0.0072	0.0039 U	0.0038 U	0.35	0.4	0.037 J	0.013 J	0.0041 J	0.051 J D	0.13 D	0.0043 U	0.039 U
PYRENE	NA	NA	NA	NA	0.016	0.0039 U	0.0038 U	0.21	0.21	0.036 J	0.0094 J	0.0041 U	0.11 D	0.099 D	0.0043 U	0.039 U
VOLATILES (UG/KG)																
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.1
Soil Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SB325	21SB328	21SB332	21GV001		21GV002		21GV003		21GV004		21GV005	
SAMPLE ID	21SS3250002	21SS3280002	21SB332-0204	21GV0010001	21GV0010102	21GV0020001	21GV0020102	21GV0030001	21GV0030102	21GV0040001	21GV0040102	21GV0050001	21GV0050102
SAMPLE DATE	20140327	20140327	20140326	20140324	20140324	20140324	20140324	20140325	20140325	20140325	20140325	20140325	20140325
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SS	SS	SB	SS	SB	SS	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH	0	0	2	0	1	0	1	0	1	0	1	0	1
BOTTOM DEPTH	2	2	4	1	2	1	2	1	2	1	2	1	2
METALS (MG/KG)													
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	78	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (S.U.)													
PH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)													
AROCLOR-1016	0.052 U	NA	NA	0.023 U	0.091 U	0.021 U	0.023 U	0.022 U	0.02 U	0.023 U	0.028 U	0.022 U	0.024 U
AROCLOR-1221	0.052 U	NA	NA	0.023 U	0.091 U	0.021 U	0.023 U	0.022 U	0.02 U	0.023 U	0.028 U	0.022 U	0.024 U
AROCLOR-1232	0.034 U	NA	NA	0.015 U	0.059 U	0.013 U	0.015 U	0.015 U	0.013 U	0.015 U	0.018 U	0.014 U	0.016 U
AROCLOR-1242	0.034 U	NA	NA	0.015 U	0.059 U	0.013 U	0.015 U	0.015 U	0.013 U	0.015 U	0.018 U	0.014 U	0.016 U
AROCLOR-1248	0.052 U	NA	NA	0.023 U	0.091 U	0.021 U	0.023 U	0.022 U	0.02 U	0.023 U	0.028 U	0.022 U	0.024 U
AROCLOR-1254	0.23	NA	NA	0.18	2.1	4.3 D	4.6 D	19	2.5	14	0.051 J	6.3	0.024 U
AROCLOR-1260	0.16	NA	NA	0.25	0.091 U	0.47 J	0.24 J	0.022 U	0.02 U	0.023 U	0.028 U	0.022 U	0.024 U
TOTAL AROCLOR	0.39	NA	NA	0.43	2.1	4.8	4.8	19	2.5	14	0.051	6.3	0.02 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)													
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-POS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)													
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

B.2 SWMU 21 SEDIMENT SAMPLE ANALYTICAL DATA

(Included on document CD)

Table B.2
Sediment Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SD/SW01	21SD/SW02		21SD/SW03	21SD/SW04	21SD/SW05	21SD/SW06	21SD/SW07	21SD/SW08		21SD/SW09	21SD/SW10	21SD/SW11	21SD12
SAMPLE ID	21SD010006	21SD020006	21SD020006-D	21SD030006	21SD040006	21SD050006	21SD06-0006	21SD07-0006	21SD08-0006	21SD08-0006-D	21SD09-0006	21SD10-0006	21SD11-0006	21SD120006
SAMPLE DATE	20100921	20100921	20100921	20100921	20100920	20100920	20110410	20110410	20110410	20110410	20110410	20110410	20110410	20140320
SAMPLE CODE	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	NA
TOP DEPTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
METALS (MG/KG)														
ALUMINUM	7960 J	8050 J	7110 J	9820 J	10200 J	8690 J	6040	7420	6830	10100	6210	10900	7210	NA
ANTIMONY	1.17 U	1.21 U	1.15 U	32.2 J	21.9 J	1.31 U	0.485 UR	0.49 U	0.485 UR	0.49 UR	0.485 UR	0.467 UR	0.481 UR	NA
ARSENIC	32.2 J	35.9 J	23.6 J	39.5 J	42.3 J	35 J	8.25 J	17.9 J	15 J	19.9 J	17.5 J	17.5 J	25 J	NA
BARIUM	134 J	104 J	76.5 J	101 J	112 J	117 J	94	78.9	74.8	109	96.6	91.8	71	NA
BERYLLIUM	2.51	2.17	1.95	2.99	3.97	2.17	0.951	1.48	1.04	1.58	1.67	1.69	1.67	NA
CADMIUM	0.928 J	0.911 J	0.815 J	2.21 J	1.79 J	1.11 J	0.744 J	1.6 J	0.819 J	0.747 J	1.23 J	0.638 J	0.953 J	NA
CALCIUM	1660 J	1330 J	1080 J	1640 J	1330 J	1770 J	4890	2190	2720	2650	1520	1610	1200	NA
CHROMIUM	70.8 J	78.4 J	62 J	111 J	104 J	70.7 J	22.7 J	62.6 J	25.9 J	46.6 J	45.6 J	35.5 J	72.2 J	NA
COBALT	34.8 J	25.4 J	23.6 J	34.8 J	28.3 J	31.4 J	16.1 J	18.8 J	18.9 J	22.9 J	25.4 J	19.1 J	21.7 J	NA
COPPER	20.4 J	19.6 J	23.9 J	6940 J	4280 J	39.4 J	32.3 J	2650 J	38.5 J	25.6 J	52.1 J	15.6 J	70.8 J	NA
IRON	108000	134000	112000	203000	203000	115000	24400 J	137000 J	32400 J	59500 J	78000 J	119000 J	110000 J	NA
LEAD	39.4 J	45.3 J	29.7 J	8150 J	2340 J	65.1 J	67.9 J	9270 J	78.6 J	62.6 J	101 J	20.5 J	261 J	NA
MAGNESIUM	776 J	876 J	670 J	726 J	685 J	786 J	1350	886	1070	1130	708	1490	771	NA
MANGANESE	2100 J	1830 J	1370 J	1630 J	1710 J	1780 J	768 J	1140 J	994 J	1270 J	1390 J	800 J	1090 J	NA
MERCURY	0.0282 J	0.0278 J	0.0212 J	0.0299 J	0.0456	0.0331 J	0.0247 J	0.138	0.0138 J	0.0468	0.0211 J	0.0427	0.0204 J	NA
NICKEL	54.2 J	43.2 J	41.6 J	66.7 J	61.9 J	49.1 J	19.6 J	35.7 J	25.8 J	35.9 J	37.8 J	34.4 J	33.2 J	NA
POTASSIUM	560 J	600 J	580 J	614 J	644 J	573 J	583 J	508 J	787	852	485 J	805	550 J	NA
SELENIUM	1.2 J	1.06 J	0.967 J	1.21 J	1.29 J	0.974 J	1.21 U	1.23 U	1.21 U	1.23 U	1.21 U	1.17 U	1.2 U	NA
SILVER	0.238 U	0.236 U	0.24 U	2.21	0.516	0.25 U	0.0833 J	0.716 J	0.243 UJ	0.0505 J	0.243 UJ	0.234 UJ	0.24 UJ	NA
SODIUM	297 U	311 U	321 U	492 J	303 U	312 U	366 U	322 U	335 U	336 U	313 U	308 U	309 U	NA
THALLIUM	0.158 J	0.236 U	0.24 U	0.299 J	0.18 J	0.146 J	0.123 J	0.137 J	0.192 J	0.173 J	0.129 J	0.153 J	0.24 U	NA
VANADIUM	56.2 J	66.2 J	46.6 J	78.6 J	87.9 J	64.7 J	19.7	38	24.3	39.6	38.4	35.7	55.3	NA
ZINC	112 J	133 J	124 J	1840 J	393 J	202 J	126 J	883 J	134 J	229 J	189 J	75 J	179 J	NA
MISCELLANEOUS PARAMETERS (MG/KG)														
TOTAL ORGANIC CARBON	4300	5000	4400	4200	2500	6000	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.0071 U	0.0075 U	0.0077 U	0.0094 U	0.0073 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA	0.025 U
AROCLOR-1221	0.0071 U	0.0075 U	0.0077 U	0.0094 U	0.0073 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA	0.025 U
AROCLOR-1232	0.0071 U	0.0075 U	0.0077 U	0.0094 U	0.0073 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA	0.017 U
AROCLOR-1242	0.0048 U	0.005 U	0.0051 U	0.0063 U	0.0048 U	0.005 U	NA	NA	NA	NA	NA	NA	NA	0.017 U
AROCLOR-1248	0.0036 U	0.0037 U	0.0039 U	0.0047 U	0.0036 U	0.0037 U	NA	NA	NA	NA	NA	NA	NA	0.025 U
AROCLOR-1254	0.0048 U	0.031	0.0051 U	0.025 J	0.028	0.06	NA	NA	NA	NA	NA	NA	NA	0.025 U
AROCLOR-1260	0.0071 U	0.0075 U	0.0077 U	0.0094 U	0.02 J	0.019 J	NA	NA	NA	NA	NA	NA	NA	0.025 U J
TOTAL AROCLOR	0 U	0.031	NA	0.025	0.048	0.079	NA	NA	NA	NA	NA	NA	NA	0.02 U
TOTAL AROCLOR HALFND	0.0208 U	0.05035	NA	0.0493	0.06315	0.0946	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	1.1 J	1.1 J	0.92 J	1.7 J	1.8 J	1.9 J	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	4.7 J	10 U	0.89 J	1.1 J	10 U	1.9 J	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	9.9 U	10 U	11 U	13 U	10 U	21 U	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	7.2 J	0.68 J	1.4 J	2.4 J	0.94 J	7 J	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	105.17	17.594	23.761	36.168	17.537	135.358	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	57	8.5 J	12	21 J	7.3 J	71	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	70	12 J	16	24 J	9.6 J	90 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	78	15 J	17	25 J	11	100 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	66	13 J	20	21 J	9.8 J	84 J	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	59	13 J	14	24 J	9.6 J	86 J	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	80	14	21	28 J	11	98	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	14	1.8 J	2.9 J	5.1 J	10 U	18 J	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	160	26	27	55 J	22	220	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	5 J	0.59 J	0.86 J	1.2 J	0.6 J	2.5 J	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	70	13 J	18	22 J	10	93 J	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	1 J	0.96 J	1 J	1.8 J	0.96 J	21 U	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	100	11	15	21 J	9.1 J	81	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	190	45	41	59 J	23	330	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)														
1,1,1-TRICHLOROETHANE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	0.46 U	0.46 U	0.54 U	0.46 U	0.51 U	0.44 U	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	0.58 J	0.62 J	0.58 J	0.44 J	0.6 J	0.63 J	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	0.46 U	0.46 U	0.54 U	0.46 U	0.51 U	0.44 U	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	2.3 U	2.3 U	2.7 U	2.3 U	2.5 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	0.91 U	0.91 U	1.1 U	0.93 U	1 U	0.88 U	NA	NA	NA	NA	NA	NA	NA	NA

Table B.2
Sediment Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SD13		21SD14		21SD15		21SD16		21SD17		21SD18		21SD19	
SAMPLE ID	**21SD130006**	**21SD130612**	**21SD140006**	**21SD140612**	**21SD150006**	**21SD150612**	**21SD160006**	**21SD160612**	**21SD170006**	**21SD170612**	**21SD180006**	**21SD180612**	**21SD190006**	**21SD190612**
SAMPLE DATE	**20140319**	**20140319**	**20140319**	**20140319**	**20140319**	**20140319**	**20140319**	**20140319**	**20140320**	**20140320**	**20140320**	**20140320**	**20140320**	**20140320**
SAMPLE CODE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
MATRIX	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**	**SD**
SAMPLE TYPE	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**	**NORMAL**
SUBMATRIX	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
TOP DEPTH	**0**	**0.5**	**0**	**0.5**	**0**	**0.5**	**0**	**0.5**	**0**	**0.5**	**0**	**0.5**	**0**	**0.5**
BOTTOM DEPTH	**0.5**	**1**	**0.5**	**1**	**0.5**	**1**	**0.5**	**1**	**0.5**	**1**	**0.5**	**1**	**0.5**	**1**
METALS (MG/KG)														
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/KG)														
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.024 U	0.025 U	0.027 U	0.025 U	0.023 U	0.025 U	0.028 U	0.026 U	0.026 U	0.023 U	0.026 U	0.028 U	0.029 U	0.026 U
AROCLOR-1221	0.024 U	0.025 U	0.027 U	0.025 U	0.023 U	0.025 U	0.028 U	0.026 U	0.026 U	0.023 U	0.026 U	0.028 U	0.029 U	0.026 U
AROCLOR-1232	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U	0.016 U	0.018 U	0.017 U	0.017 U	0.015 U	0.017 U	0.018 U	0.019 U	0.017 U
AROCLOR-1242	0.016 U	0.016 U	0.018 U	0.016 U	0.015 U	0.016 U	0.018 U	0.017 U	0.017 U	0.015 U	0.017 U	0.018 U	0.019 U	0.017 U
AROCLOR-1248	0.024 U	0.025 U	0.027 U	0.025 U	0.023 U	0.025 U	0.028 U	0.026 U	0.026 U	0.023 U	0.026 U	0.028 U	0.029 U	0.026 U
AROCLOR-1254	0.019 J	0.025 U	0.027 U	0.025 U	0.032 J	0.21	0.028 U	0.026 U	0.026 U	0.023 U	0.026 U	0.028 U	0.029 U	0.026 U
AROCLOR-1260	0.016 J	0.025 U	0.027 U	0.025 U	0.019 J	0.025 U	0.058	0.026 U	0.026 U	0.023 U	0.026 U	0.028 U	0.029 U	0.026 U
TOTAL AROCLOR	0.035 J	0.02 U	0.02 U	0.02 U	0.051	0.21	0.058	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
TOTAL AROCLOR HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)														
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table B.2
Sediment Sample Analytical Data
SWMU 21 - DRMO Storage Lot
NSA Crane, Crane, Indiana

LOCATION	21SD20		21SD21		21SD22		21SD23	21SD24	21SD26	21SD27	21SD28	21SD29	21SD30	21SD31
SAMPLE ID	21SD200006	21SD200612	21SD210006	21SD210612	21SD220006	21SD220612	21SD23-0006	21SD24-0006	21SD260006	21SD270006	21SD280006	21SD29-0006	21SD300006	21SD31-0006
SAMPLE DATE	20140320	20140320	20140320	20140320	20140320	20140320	20140327	20140327	20140327	20140327	20140327	20140327	20140327	20140327
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
SAMPLE TYPE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOP DEPTH	0	0.5	0	0.5	0	0.5	0	0	0	0	0	0	0	0
BOTTOM DEPTH	0.5	1	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
METALS (MG/KG)														
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTIMONY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BERYLLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CADMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COBALT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
IRON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LEAD	NA	NA	NA	NA	NA	NA	24	13	NA	NA	960	26	NA	8.8
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MERCURY	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NICKEL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SILVER	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VANADIUM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MISCELLANEOUS PARAMETERS (MG/KG)														
TOTAL ORGANIC CARBON	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBS (MG/KG)														
AROCLOR-1016	0.028 U	0.026 U	0.025 U	0.022 U	0.026 U	0.028 U	NA	NA	0.023 U	0.025 U	0.051 U	NA	0.024 U	NA
AROCLOR-1221	0.028 U	0.026 U	0.025 U	0.022 U	0.026 U	0.028 U	NA	NA	0.023 U	0.025 U	0.051 U	NA	0.024 U	NA
AROCLOR-1232	0.018 U	0.017 U	0.016 U	0.014 U	0.017 U	0.018 U	NA	NA	0.015 U	0.016 U	0.033 U	NA	0.016 U	NA
AROCLOR-1242	0.018 U	0.017 U	0.016 U	0.014 U	0.017 U	0.018 U	NA	NA	0.015 U	0.016 U	0.033 U	NA	0.016 U	NA
AROCLOR-1248	0.028 U	0.026 U	0.025 U	0.022 U	0.026 U	0.028 U	NA	NA	0.023 U	0.025 U	0.051 U	NA	0.024 U	NA
AROCLOR-1254	0.028 U	0.026 U	0.025 U	0.022 U	0.026 U	0.028 U	NA	NA	0.023 U	0.12	0.15	NA	0.082	NA
AROCLOR-1260	0.028 U	0.026 U	0.025 U	0.022 U	0.026 U	0.028 U	NA	NA	0.023 U	0.025 U	0.027 J	NA	0.072	NA
TOTAL AROCLOR	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	0.02 U	0.12	0.18	NA	0.15	NA
TOTAL AROCLOR HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAP EQUIVALENT-HALFND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHRYSENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FLUORENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PHENANTHRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (UG/KG)														
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M+P-XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
O-XYLENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOLUENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL XYLENES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX C

SUPPLEMENTAL CONTRACTOR SPECIFICATIONS

SUPPLEMENTAL SPECIFICATIONS
INTERIM MEASURES WORK PLAN
SWMU 21 – DRMO STORAGE LOT
NSA CRANE
CRANE, INDIANA

Contractor Requirements

The Contractor will be responsible for performing the following work:

1. Attend pre-Interim Measures Work Plan (IMWP) implementation meeting.
2. Submit documentation in accordance with the "Basic Contract" 30 days prior to beginning work to allow the Navy sufficient time to review and comment. The Contractor will then incorporate Navy comments into the documents. These documents include the following:
    - Work Plan
        - Excavation and Handling Plan
            - ✓ Specific steps for how contaminated soil will be removed from each excavation area and eventually placed in trucks/roll-offs for off-site disposal).
            - ✓ Details regarding decontamination requirements/procedures
            - ✓ Lead stabilization procedures (e.g., pad construction details, waste pile management, specifics on treatment including specific amendments, mixing process, process duration, pre- and post-stabilization testing procedures, etc.).
        - Hazardous/Waste Management Plan
        - Environmental Protection Plan
        - Erosion and Sediment Control Plan
        - Stormwater Pollution Prevention Plan
        - Transportation and Disposal Plan
    - Site Specific Health and Safety Plan (SSHSP) and Activity Hazard Analysis
    - Project Quality Control Plan (QCP)
3. Acquire Facility-specific permits, including but not limited to the following:
    - Safety & Building Availability Permit (ESO 8020/11)
    - Digging Permit (NWSCC 11000/3)
    - Hot Work Permit
4. Mobilize required equipment and personnel to excavate the indicated contaminated soil.
5. Construct and maintain the required erosion and sediment control devices for the duration of the project.
6. Construct required support facilities including, but not limited to, dewatering pad, decontamination pad(s), and material storage areas.
7. Remove sections of the fence surrounding the DRMO property in order to access contaminated soil and sediment excavation areas outside the DRMO fence and to facilitate the excavation of soil contamination along the actual fence structure. During the performance of the soil excavation activities, the contractor will be required to provide a secure temporary fence at the DRMO.
8. Excavate, transport, and dispose of PCBs, lead, and polycyclic aromatic hydrocarbon (PAH)-contaminated soils, and lead-contaminated sediments from Haynes Branch.
9. Restore surface soil excavation area to meet surrounding grades.
10. Remove all temporary support facilities, leaving perimeter erosion and sediment controls in place until revegetation is permanently stabilized and as instructed by the Navy.
11. Following the completion of soil and sediment excavations for the SWMU 21 IM, the contractor will reinstall the DRMO security fence, which will meet the original fence material specifications.
12. Restore areas used for temporary support facilities (regrading and revegetation).
13. Demobilize equipment and personnel.

In addition to the Quality Control (QC) submittals and Safety and Health submittals required by the NSA Crane Contractor's Operations Manual and the Basic Contract, the Contractor shall submit the following to the Navy:

- Fieldwork reports in accordance with Part 6.4 Section C of the Basic Contract.
- Contractor 29 Code of Federal Regulation (CFR) 1910.120 Employee Training Certificates for all Contractor employees scheduled to be on-site.
- Erosion and Sediment (E&S) Control installation and inspection logs.
- Copies of NSA Crane specific permits.
- Certification and sampling results for backfill material and topsoil. The need for backfill should be kept to a minimum, especially for raised areas that were already higher than the surrounding grade. A minimum of one sample per borrow source is required.
- Waste transportation subcontractor name, address, contact name, telephone number, and United States Department of Transportation (USDOT) number.
- Hazardous waste disposal facility name, address, contact name, telephone number, and United States Environmental Protection Agency (USEPA) and State identification numbers, if required.
- Solid waste disposal facility name, address, contact name, telephone number, USEPA and State identification numbers.
- Waste profiles, complete waste characterization results, and any waste disposal facility pre-approval or approval documentation.
- Shipment Manifests (manifests and other documents required to ship waste).
- Delivery Certificates (verification that waste was received at identified waste disposal facility).
- Treatment and Disposal Certificates (verification that waste was successfully received and disposed).
- Decontamination Log.

The Contractor-provided information will be compiled in the project Contract Task Order (CTO) Closure Report to be prepared by the Navy.

Supplemental Specifications

In addition to the performance specifications presented in the NSA Crane Contractor's Operation Manual and in the Basic Contract, the Contractor shall perform the activities in accordance with the supplemental specifications provided below.

General Requirements

The Contractor is advised that this project is subject to Federal, State, and local regulatory agency inspections and review for compliance with environmental laws and regulations. The Contractor shall fully cooperate with any representative from any Federal, State, or local regulatory agency who may visit the job site and shall provide immediate notification to the Officer in Charge of Construction (OICC), who shall accompany them on any subsequent site inspections. The Contractor shall complete, maintain, and make available to the OICC, Facility, or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State, and local laws and regulations. The Contractor shall immediately notify the OICC if a Notice of Violation (NOV), Notice of Deficiency (NOD), or similar regulatory notice is issued to the Contractor.

The Contractor shall be responsible for all damages to persons or property resulting from Contractor fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State, or local regulatory agency as a result of the Contractor's or any subcontractor's violation of an applicable Federal, State, or local environmental law or regulation. Should an NOV, Notice of Noncompliance, NOD, or similar regulatory agency notice be issued to the Government or Facility owner/operator on account of the actions or inactions of the Contractor or one if its subcontractors in the performance of work under this contract, the Contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

After approval of the Contractor's Work Plan and before commencement of the work, the Contractor shall submit to the OICC the required certifications. As requested by the OICC, the Navy Representative for this project may review and provide surveillance for the OICC to determine if Contractor's submittals comply with the contract requirements.

The Contractor shall be required to commence work on the approved Contractor's Work Plan within 5-calendar days after receiving the notice to proceed and to prosecute the work diligently after receiving the notice to proceed.

NSA Crane will remain in operation during the entire construction period. The Contractor shall schedule the work as to cause the least amount of interference with the Facility. Work schedules shall be subject to the approval of the OICC. Permission to interrupt Facility road services shall be requested in writing a minimum of 15-calendar days prior to the desired date of interruption. The OICC shall be notified two weeks prior to starting excavation activities.

Regular work hours shall consist of an 8½ hour daily period established by the OICC, Monday through Friday, excluding Government holidays. The Contractor should assume an 8½ hour daily period. Working outside of the 8½ hour daily period will require approval by the OICC. Work hours shall be established during the pre-IMWP implementation meeting.

On-site storage, laydown, material handling, and decontamination activities shall be limited to areas approved by the OICC.

During the progress of construction activities, the work area and adjacent areas shall be kept clean and free of rubbish, surplus materials, and unneeded construction equipment. No material or debris shall be allowed to flow or wash into watercourses, ditches, gutters, drains, or pipes. Upon completion of the work, the Contractor shall sweep paved areas and rake clean landscaped areas, and remove waste and surplus materials, rubbish, and construction facilities from the site.

Work Restrictions

Contractor personnel working on the Facility shall become familiar with and obey Facility regulations and keep within the limits of the work and avenues of ingress and egress as directed. Personnel shall not enter any restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be clearly marked for identification.

The Contractor shall indicate on the construction schedule any activity that could potentially interrupt Facility operations. The Contractor shall notify the OICC in writing 15-calendar days prior to the required interruption.

Facilities and Services

Provide utility permits in accordance with Part 4.13 Section C of the Basic Contract.

NSA Crane shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as indicated. The amount of each utility service consumed shall be charged to or paid for by the Contractor at the prevailing rates charged to NSA Crane or shall be furnished at no charge as indicated. The Contractor shall carefully conserve any utilities furnished without charge.

The point at which NSA Crane will deliver such utilities or services and the quantity available will be identified by NSA Crane.

The Contractor, at its expense and in a workman-like manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

Electric – Electrical power available, primary voltage is [2400 volt 3 phase, 3 wire, 60 cycle AC. Secondary voltages may be 120/208 or 120/240 volts.] Final taps and tie-ins to the NSA Crane utility grid will be made by NSA Crane electric shop.

Potable Water – Potable water is available at B-3245. Contractor shall provide potable water for use by all personnel.

Water – A reasonable quantity of water is available at NSA Crane at the Building 3245 at no charge. Provide backflow prevention devices on connections to potable water supplies. Under no circumstances will taps to NSA Crane fire hydrants be allowed for obtaining water.

Telephone – Telephone service is not available.

Sanitary Facilities - Provide temporary sanitary facilities for use by all personnel in accordance with Part 3.10 Section C of the Basic Contract.

Municipal Waste – Municipal waste storage and disposal is not available.

Sewer – Water resulting from personnel and equipment decontamination, excavation dewatering, and water from materials handling pad will be containerized for off-site disposal by the contractor.

<u>Site Personnel Qualifications</u>

Site Superintendent - The Contractor shall designate a Site Superintendent who shall have responsibility and authority to direct work performed. The Site Superintendent shall be responsible for the management and execution of all site activities in accordance with the IMWP, approved Contractor's Work Plan, and all Federal, State, and local laws and regulations. The Site Superintendent may <u>not</u> act in the dual role as the Project Quality Control Manager or Site Health and Safety Specialist (SHSS). The Site Superintendent shall have, as a minimum, the following qualifications:

- A minimum of 6-years site superintendent experience.
- Familiar with the requirements of the U.S. Army Corps of Engineers Safety - Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Project Quality Control Manager - The Contractor shall designate a Project QC Manager who shall assist and represent the QC Program Manager in continued implementation and enforcement of the approved Project QC Plan. The QC Program Manager or Project QC Manager shall be physically present at the project site whenever work is in progress. The Project QC Manager may be dual hatted with the SHSS if qualified. The Project QC Manager shall have, as a minimum, the following qualifications:

- A minimum 2-years experience as a Project QC Manager.
- A minimum of 10-years combined experience in the following positions: project superintendent, QC manager, project manager, project engineer or construction manager on similar size and type of construction contracts which included the major trades that are part of this IM.
- Alternatively, the above 10-year combined experience requirement may be satisfied by providing a professional engineer registered in the State of Indiana having at least 2-years experience as a Project QC Manager.
- Familiar with the requirements of the U.S. Army Corps of Engineers Safety - Safety and Health Requirements (EM 385-1-1).
- Experience in the areas of hazard identification and safety compliance.

Site Health and Safety Specialist - The Contractor shall designate a Site Health and Safety Specialist (SHSS) who shall assist and represent the Contractor's Health and Safety (H&S) Manager in continued implementation and enforcement of the approved Site Health and Safety Plan (SSHSP). The SHSS shall have the on-site responsibility and authority to modify and stop work, or remove personnel from the site if working conditions change that may affect on-site and off-site health and safety. The SHSS shall be physically present at the project site at all times. The SHSS may be dual hatted with the Project QC Manager. The SHSS shall have, as a minimum, the following qualifications:

- A minimum of 5-years safety work on similar projects.
- 30-hour OSHA construction safety class or equivalent within the last 5-years.
- An average of at least 24 hours of formal safety training each year for the last 5-years.
- Competent person status for at least the following:
    - excavation,
    - health hazard recognition, evaluation and control of chemical, physical and biological agents, and
    - personal protective equipment and clothing to include selection, use and maintenance.
- First aid and cardiopulmonary resuscitation qualified.

Quality Control

Approval of the QC Plan is required prior to the start of construction. The OICC reserves the right to require changes in the QC Plan and operations as necessary to ensure the specified quality of work. The Contracting Officer reserves the right to interview the QC Manager at any time in order to verify his/her submitted qualifications.

The OICC shall be notified, in writing, of any proposed changes to the QC Plan, at a minimum of 7-calendar days prior to the implementation of the proposed change. Proposed changes must be approved by the OICC.

Combined Contractor Production Report/Contractor Quality Control Report (CPR/CQCR) is required for each day that work is performed. CPR/CQCRs are to be prepared, signed, and dated by the Project QC Manager.

Safety and Occupational Health Requirements

The SHSS and Contractor representatives who have a responsibility or significant role in accident prevention shall attend the pre-IMWP implementation meeting. The purpose of the meeting is for the Contractor and the OICC to become acquainted and explain the functions and operating procedures of their respective organizations and to reach mutual understanding relative to the administration of the overall project before the initiation of work. The Contractor shall discuss the details of the work identified in the approved Contractor's Work Plan and discuss which construction phases will require significant or additional activity hazard analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of additional hazard analysis shall be established to preclude project delays. Lastly, deficiencies in the submitted accident prevention report will be brought to the attention of the Contractor at the meeting. The Contractor shall revise the plan to correct deficiencies and resubmit the plan for acceptance.

New employees (prime or subcontractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

If unforeseen materials hazardous to human health are encountered during operations, then that portion of the work shall be stopped and the OICC shall be notified immediately. Within 14-days, the Navy will determine if the material is hazardous. If the material is not hazardous or poses no danger, the OICC will direct the Contractor to proceed without change. If the material is determined to be hazardous or to pose danger, and handling of the material is necessary to accomplish the work, the Contracting Officer will issue modifications to the proposed work.

Equipment shall be operated by designated qualified operators. Proof of qualifications shall be kept on the project site for review. Manufacturer's specifications or owner's manual for the equipment shall be on site and reviewed for additional safety precautions or requirements. Such additional safety precautions or requirements shall be incorporated into the activity hazard analysis. Mechanized equipment shall be inspected in accordance with manufacturer's recommendations for safe operations by a competent person prior to being placed into use. Daily checks or tests shall be conducted and documented on mechanized equipment by designated competent persons.

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

Environmental Controls

The need for an E&S Control Plan is included in the IMWP. The E&S Control Plan will describe the location and description of all erosion and sediment control measures, a sequence of construction to be followed, graphic details of all E&S control measures to be used, and an approval sign-off block containing the names of the Facility and Contractor contacts, whose signatures indicate plan acceptance/approval.

The Contractor shall adhere to and strictly follow the E&S Control Plan and maintain all measures used during construction. Modifications to the E&S Control Plan shall be submitted to the OICC, and as required, to the Indiana Department of Environmental Management (IDEM) for approval. No modifications to the E&S Control Plan will be allowed until these changes have been approved by the OICC and IDEM and three copies of the approved modifications have been submitted to the OICC and one copy of the approved modifications have been submitted to IDEM.

Transportation and Disposal of Contaminated Material

The Contractor is responsible for the preparation of manifests for government signature to document the disposal of specified soil as hazardous waste soil and other soil as non-hazardous waste soil. The Contractor will perform adequate characterization sampling of contaminated soil to confirm and verify that excavated soil is managed, transported, and disposed in accordance with applicable regulatory requirements. The Contractor shall be solely responsible for complying with all Federal, State, and local requirements for decontamination of vehicles, equipment, and containers and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the Contractor shall perform the following:

- Visually inspect all vehicles, equipment, and containers leaving the work site for proper decontamination.
- Prepare and maintain a written decontamination log.

The Contractor shall be solely responsible for complying with all Federal, State, and local requirements for transporting contaminated materials through the applicable jurisdictions and shall bear all responsibility and cost for any noncompliance. In addition to these requirements, the Contractor shall perform the following:

- Inspect and document all vehicles and containers for proper operation and covering.
- Inspect all vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.

All contaminated materials removed from the site shall be disposed in a treatment/disposal facility permitted to accept such material.

The Contractor shall properly dispose of Investigation-Derived Waste (IDW), personnel protective equipment, and miscellaneous wastes associated with implementation of the IMWP, including sampling and analytical wastes that are generated by the contractor or Navy representatives.

APPENDIX D

REGULATORY AGENCY APPROVALS

Approval from Indiana Department of Environmental Management (IDEM) - #1

-----Original Message-----
From: GRIFFIN, DOUG [mailto:DGRIFFIN@idem.IN.gov]
Sent: Thursday, July 31, 2014 1:31 PM
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV; Ramanauskas, Peter
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Tom, I compared the figures in this version to the figures I marked up and scanned from the last version and only see one change. Figure 3-9 Pb area 7B has been removed. Not a concern for me.

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Tuesday, July 29, 2014 3:04 PM
To: GRIFFIN, DOUG; Ramanauskas, Peter (ramanauskas.peter@epa.gov)
Subject: DRAFT FINAL SWMU 21 IMWP

Doug/Pete,

I'm sending you a PDF of the SWMU 21 IMWP in advance of the "official" submittal. You'll receive an email from AMRDEC as to how to download. This is the version the contractors will see. We are being told by the money folks that we have to make an award by 22 September. I don't know that a lot has changes since the previous version, although some of the discrete excavation boundaries will have changed. Your questions or comments are certainly welcome (although, a blanket approval would be even better).

Thanks,
Tom

Approval from Indiana Department of Environmental Management (IDEM) - #2

-----Original Message-----
From: GRIFFIN, DOUG [mailto:DGRIFFIN@idem.IN.gov]
Sent: Thursday, July 31, 2014 11:30 AM
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Subject: RE: SWMU 21 DRMO IMWP

OK, as long as it appeases TSCA. The overall exposure is going to come out below RCG standards.

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Thursday, July 17, 2014 9:42 AM
To: GRIFFIN, DOUG
Subject: RE: SWMU 21 DRMO IMWP

Doug - since PCB Area 2 is considered far enough inside the fence so as not to cause a recontamination issue outside the fence, the TSCA low occupancy standard was applied (=25 ppm). SB119 had a detection of 11.4 mg/kg.

Thanks,
Tom

-----Original Message-----
From: GRIFFIN, DOUG [mailto:DGRIFFIN@idem.IN.gov]
Sent: Wednesday, July 16, 2014 9:53 AM
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Subject: SWMU 21 DRMO IMWP

Tom, I've read thru the workplan and found only one discrepancy. North Central Area - PCB Area 2: Shouldn't SB119 be included with the excavation?

Otherwise no comments.

Approval from U.S. EPA Region V

-----Original Message-----
From: Ramanauskas, Peter [mailto:ramanauskas.peter@epa.gov]
Sent: Monday, October 06, 2014 10:05 PM
To: Brent, Thomas CIV NAVFAC MIDLANT, PWD Crane
Cc: Basinski, Ralph; Barringer, Rick
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Hi Tom,

I don't have any additional comments on the IMWP, so go please move forward with that (if IDEM is OK with the rest of the plan). I just want to see if when you submit the final IMWP, you should submit it to USEPA with a cover letter requesting a TSCA approval under 761.61.

I'll check in with our Regional Counsel again.

Thanks,
Pete

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MIDLANT, PWD Crane [mailto:thomas.brent@navy.mil]
Sent: Monday, October 06, 2014 11:33 AM
To: Ramanauskas, Peter
Cc: Basinski, Ralph; Barringer, Rick
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Pete,

The pre-start meeting with the contractor is tomorrow. Do you think you could let us know soon as to whether or not you will have any more comments?

Thanks,
Tom

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Sent: Wednesday, September 17, 2014 9:36 AM
To: 'Ramanauskas, Peter'
Cc: GRIFFIN, DOUG; Cole, Linda L CIV NAVFAC MIDLANT, IPTNE; Basinski, Ralph; 'Barringer, Rick'
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Pete,

Attached are the responses to your comments along with a tracked-changes version of Section 3 of the IMWP. Please let us know if you have any more questions or if we may finalize the document.

Thanks,
Tom

-----Original Message-----
From: Ramanauskas, Peter [mailto:ramanauskas.peter@epa.gov]
Sent: Thursday, July 31, 2014 3:40 PM
To: GRIFFIN, DOUG; Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Tom,

I only looked at the PCB section 3.2.1 and Figures 3-2 to 3-4.

- With respect to confirmation sampling in the PCB areas, Tetra Tech should better describe how these will be collected (e.g. composites? Frequency?).

- For PCB subareas 1 & 2, recommend perform some confirmation sampling at the 2 ft bgs level as it doesn't look like you've got deeper clean samples there.

- For 21SB250, perform post-removal confirmation sampling around this location.

- Subarea 3C: text refers to "sections" of the western perimeter excavation. Which sections? For the base of the excavation, there should be more than one floor sample given the size of the area.

- Subarea 5: there do not appear to be clean perimeter samples at the 2-4 foot interval. Similar to our OJT discussion, if you want to use characterization samples to define excavation limits, you need to show clean intervals at the limits/depths of the excavation.

- For the purposes of PCB disposal, are you going to need a letter from us referencing approval under 761.61(a) or (c)? Or are you planning to dispose of all PCB impacted materials in a TSCA landfill as allowed for under 761.61(b) without a specific approval. Just thinking ahead a bit.

Let me know if you have questions.

Thanks,
Pete

-----Original Message-----
From: GRIFFIN, DOUG [mailto:DGRIFFIN@idem.IN.gov]
Sent: Thursday, July 31, 2014 12:31 PM
To: Brent, Thomas CIV NAVFAC MW, PWD Crane EV; Ramanauskas, Peter
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Tom, I compared the figures in this version to the figures I marked up and scanned from the last version and only see one change. Figure 3-9 Pb area 7B has been removed. Not a concern for me.

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From: Brent, Thomas CIV NAVFAC MW, PWD Crane EV [mailto:thomas.brent@navy.mil]
Sent: Tuesday, July 29, 2014 3:04 PM
To: GRIFFIN, DOUG; Ramanauskas, Peter (ramanauskas.peter@epa.gov)
Subject: DRAFT FINAL SWMU 21 IMWP

Doug/Pete,

I'm sending you a PDF of the SWMU 21 IMWP in advance of the "official" submittal. You'll receive an email from AMRDEC as to how to download. This is the version the contractors will see. We are being told by the money folks that we have to make an award by 22 September. I don't know that a lot has changes since the previous version, although some of the discrete excavation boundaries will have changed. Your questions or comments are certainly welcome (although, a blanket approval would be even better).

Thanks,
Tom

Approved Responses to Comments Provided by U.S. EPA Region V

-----Original Message-----
From: Ramanauskas, Peter [mailto:ramanauskas.peter@epa.gov]
Sent: Thursday, July 31, 2014 3:40 PM
To: GRIFFIN, DOUG; Brent, Thomas CIV NAVFAC MW, PWD Crane EV
Subject: RE: DRAFT FINAL SWMU 21 IMWP

Tom,

I only looked at the PCB section 3.2.1 and Figures 3-2 to 3-4.

Comment #1 - With respect to confirmation sampling in the PCB areas, Tetra Tech should better describe how these will be collected (e.g. composites? Frequency?).

Response #1 - The following text (shown below in *italic* font) will be inserted at the end of Section 3.1 to introduce the technical basis for the confirmation sampling program for the IM at SWMU 21:

Tetra Tech will perform confirmation sampling of specific excavation areas when pre-excavation soil analytical data and stream bed material analytical data are insufficient to identify the limits of vertical or horizontal contamination-specific excavation areas. Confirmation samples will be collected at all excavation sidewalls where data are not available at the horizontal boundary of the excavation. The sidewalls will be sampled so that a single soil composite sample will represent a segment of up to 50 linear feet of excavation sidewall. For each depth interval (typically two-foot) within a sidewall segment, six individual aliquots will be collected and composited into a single representative sample. The six grab samples will be collected in a zig zag pattern separated by equal distances. The first sample will be collected approximately one-third of the depth from the top of the interval of interest, with the second sample collected from the middle of the interval, and the third sample collected from approximately two-thirds of the distance from the top of the interval of interest. The same pattern will be repeated for the next three aliquots in the composite soil sample. For excavations that are greater than two feet high, the same sidewall length will be sampled in a similar fashion in two foot depth intervals (or less) as needed.

Samples will be collected from all excavation floors where data are not available at the vertical boundary of the excavation. A minimum of one soil composite sample will be collected from each subarea (as needed) and consist of five discrete soil sample aliquots collected from the excavation floor. A 5-point composite sample will be collected from the excavation floors. The soil sample aliquot pattern will be similar to the five dots on the face of a game dice. One composite soil sample will be collected for each 1,200 square feet of excavation floor (an area roughly covering about 35 feet by 35 feet).

Comment #2 - For PCB subareas 1 & 2, recommend perform some confirmation sampling at the 2 ft bgs level as it doesn't look like you've got deeper clean samples there.

Response #2 - The excavation depth was misstated as two feet below ground surface in the text discussion of PCB Subareas 1A and 1B presented in Section 3. The actual excavation depth planned for PCB Subareas 1A and1B should be indicated as one foot below ground surface, and was correctly stated in Table 3-3. The text has been modified to correct this inconsistency. The PCB subarea soils that lie directly west of and border Haynes Branch will be excavated to remove detected soil PCB concentrations greater than one part per million (>1 ppm). The following sentence has been added to the end of the paragraph describing PCB Subareas 1A and 1B in Section 3.2.1:

Confirmation samples will be collected from the excavation floor of PCB subareas 1A and 1B to verify that the cleanup standard for PCBs in soil outside the DRMO fence line (<1 ppm) have been met.

Similar changes have been made in the IMWP for Subareas PCB Subareas 3C and 5 and also for Lead Subareas 4 and 8, as noted below in the responses to Comment #3 and Comment #5.

The remediation goal developed for soil PCB contamination inside the DRMO fence line (like PCB Subarea 2) was focused on areas where soil PCBs concentrations were > 25 ppm. Soil excavation at PCB Subarea 2 will extend to a depth of 4 feet bgs. Confirmation sampling will be required at PCB Subarea 2, along those excavation perimeter walls (between sampling points 21SB86 and 21SB87) where the soil sampling performed at the excavation nodes did not continue beyond a vertical depth of 2 feet bgs. The need for confirmation sampling is already identified for PCB Subarea 2 in the last two sentences of that subsection. No changes are required in the text.

Comment #3 - For 21SB250; perform post-removal confirmation sampling around this location.

Response #3 - Soil sampling location 21SB250 lies within the proposed excavation for Lead Area 4. Confirmation soil sampling for lead will be required for the excavation walls and floor at Lead Area 4. The last three sentences of the discussion for PCB Subarea 3C have been modified to better describe the confirmation sampling requirements, as follows:

Confirmation sampling for PCBs and lead will be completed in Lead Area 4. PCB confirmation samples will be collected along the perimeter of PCB Subarea 3C that is contiguous to Lead Area 4 to verify that cleanup standards have been met. The total vertical extent of the soil PCB contamination in PCB Subarea 3C is not fully delineated, especially outside the DRMO fence line; therefore, a floor sample from the bottom of the excavation will be collected to confirm that the PCB cleanup goal has been met on the excavation floor. The estimated volume of PCB-contaminated soil to be removed from PCB Subarea 3C is 915 cy, as presented in Table 3-3.

Comment #4 - Subarea 3C: text refers to "sections" of the western perimeter excavation. Which sections? For the base of the excavation, there should be more than one floor sample given the size of the area.

Response #4 - As noted in the Response to Comment #3, Tetra Tech will perform confirmation sampling at PCB Subarea 3C. The sentence referring to "sections" of the western perimeter was deleted as part of the text change to address Comment #3.

The technical approach for excavation floor sampling and the general area to be represented by an excavation floor sample is described in the new text added to address Comment #1. No additional text changes are required to address the comment about floor confirmation samples and area size.

Comment #5 - Subarea 5: there do not appear to be clean perimeter samples at the 2-4 foot interval. Similar to our OJT discussion, if you want to use characterization samples to define excavation limits, you need to show clean intervals at the limits/depths of the excavation.

Response #5 – Similar to the situation described in Comment #3 for 21SB250, soil sampling location 21SB48 lies within the proposed excavation to address Lead Area 8. The following sentence has been added at the end of the discussion of PCB Subarea 5:

Confirmation sampling for PCBs will be performed in Lead Area 8 and in PCB Area 5 to confirm that cleanup standards have been met.

A similar statement has been added to the discussion of Lead Area 8:

Confirmation sampling for PCBs will also be performed in Lead Area 8 in the vicinity of Soil Sample 21SB48 to confirm that cleanup standards have been met in this excavation area.

Comment #6 - For the purposes of PCB disposal, are you going to need a letter from us referencing approval under 761.61(a) or (c)? Or are you planning to dispose of all PCB impacted materials in a TSCA landfill as allowed for under 761.61(b) without a specific approval. Just thinking ahead a bit.

Response #6 – PCB-impacted soils will be disposed in accordance with 40 CFR 761.61(a). Soils with PCB concentrations of 50 ppm and greater will be disposed in a TSCA or RCRA Subtitle C landfill. A letter from EPA referencing approval of landfill disposal of regulated wastes under 40 CFR 761(a) will be required.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, MID-ATLANTIC
9324 VIRGINIA AVENUE NORFOLK, VA 23511-3095

5090
Ser PRX4/089

MAY 4 2015

U.S. Environmental Protection Agency, Region V
Regional Administrator, Regional PCB Coordinator (LU-9J)
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Ramanauskas:

Naval Facility Engineering Command Mid-Atlantic, Public Works Department, Crane requests approval for cleanup and disposal of Polychlorinated Biphenyls (PCBs) from Solid Waste Management Unit 21 under 40 CFR 761.61(c). The PCB cleanup and disposal activities will be conducted per the approved Interim Measures Work Plan dated October 21, 2014.

My signature serves as certification that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file in Building 3245 at Naval Support Activity Crane, and are available for United States Environmental Protection Agency inspection. In addition, the permit required Certification Statement is also provided for your records.

If you require any further information, my point of contact is Thomas J. Brent, telephone 812-854-6160 or email thomas.brent@navy.mil.

Sincerely,

J. A. RIGGINS
Environmental Division Director

Enclosure: 1. Certification Statement

Copy to:

ADMINISTRATIVE RECORD	IDEM (Doug Griffin)
NAVFAC MIDLANT (Linda Cole)	TTL (Bob Beckwith
PRX4	TTNUS (Ralph Basinski)
1023	IMWP Copy

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE

Environmental Division Director
TITLE

4 May 2015
DATE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 15 2015

Mr. Tom Brent
Naval Surface Warfare Center
EPD, Code 0592-TB Bldg 3260
300 Highway 361
Crane, Indiana 47522-5001

REPLY TO THE ATTENTION OF:

RE: Interim Measures Work Plan – 40 CFR §761.61(c) Approval
SWMU 21, DRMO Storage Lot
Naval Support Activity, Crane, Indiana

Dear Mr. Brent:

On May 4, 2015, the U.S. Department of the Navy (Navy) requested that the U.S. Environmental Protection Agency Regional Administrator approve its October 10, 2014 Interim Measures Work Plan (IMWP) under the risk-based disposal provisions of the polychlorinated biphenyl (PCB) regulations at 40 Code of Federal Regulations (CFR) §761.61(c). On May 4 and 13, 2015, the Navy provided a written certification regarding the PCB cleanup as required under 40 CFR §761.61(a)(2)(E). Under the Toxic Substances Control Act (TSCA) delegation 12-5, the Regional Administrator has redelegated her authority to the Director of the Land and Chemicals Division.

The IMWP addresses the excavation, sampling and off-site disposal activities of soils and sediments contaminated with PCBs, lead and polycyclic aromatic hydrocarbons (PAHs) at Solid Waste Management Unit (SWMU) #21 – DRMO Storage Lot located at the Naval Support Activity (NSA) facility in Crane, Indiana. The Navy is conducting the PCB cleanup and corrective action measures under a Resource Conservation and Recovery Act operating permit issued by the Indiana Department of Environmental Management (IDEM). For purposes of the requested approval, EPA's review focused on those sections of the IMWP that addressed the excavation, verification sampling, and off-site disposal of PCB remediation waste only.

EPA provided comments to the Navy on the July 25, 2014 draft final version of the IMWP. The Navy's responded to EPA's comments on September 17, 2014. EPA is approving the Navy's cleanup and disposal of these PCB Remediation Wastes under 40 CFR § 761.61(c) with the following conditions:

1) The Navy will remove SWMU #21 PCB impacted soils and sediments for off-site disposal and perform confirmation sampling in accordance with Sections 3.1 and 3.2.1, Table 3-3 of the IMWP, and the September 17, 2014 responses to comments provided in Appendix D of the October 10, 2014 IMWP.

2) PCB remediation waste $\geq$ 50 milligrams per kilogram (mg/kg) will be disposed of off-site based on in-situ concentrations in accordance 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*iii*).

3) PCB remediation waste at concentrations of < 50 mg/kg PCB will be disposed of off-site based on in-situ concentrations in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*ii*) and (a)(5)(v)(A).

The Navy is responsible for ensuring continued compliance with this approval, all applicable provisions of TSCA and the federal PCB regulations. Any departure from the conditions set forth in this letter or the sections of the October 10, 2014 IMWP, referenced above, must receive prior written authorization from the Remediation and Reuse Branch of the Land and Chemicals Division. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by the Navy are authorized to conduct the activities set forth in the IMWP. The Navy is responsible for ensuring that it has selected transporters and disposal facilities that are authorized to conduct these activities in accordance with all applicable federal, state, and local statues and regulations. This letter does not relieve the Navy from compliance with any other federal, state or local regulation and does not preclude EPA from initiating any enforcement action, including an action seeking civil penalties for any violation of federal regulations.

If you have any questions regarding this matter, please contact Peter Ramanauskas of my staff at (312) 886-7890.

Sincerely,

Margaret M. Guerriero
Director
Land and Chemicals Division

cc: Mr. Doug Griffin, IDEM

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC
REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62470-13-D-8007
CONTRACT TASK ORDER NO. WE38

FINAL
INTERIM MEASURES WORK PLAN
SOLID WASTE MANAGEMENT UNIT (SWMU) 17/04
POLYCHLORINATED BIPHENYL (PCB) CAPACITOR BURIAL/POLE YARD
NAVAL SUPPORT ACTIVITY (NSA) CRANE
CRANE, INDIANA

June 2016

Prepared for

Department of the Navy
Naval Facilities Engineering Command, MIDLANT
9742 Maryland Avenue
Norfolk, VA 23511-3095

Prepared by

Tetra Tech EC, Inc.
5250 Challedon Drive
Virginia Beach VA 23462

Revision	Date	Prepared by	Approved by	Pages Affected
00	4/7/16	M. Hagan	D. Kearns	All
01	6/10/16	M.Hagan	D. Kearns	All

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TABLE OF CONTENTS

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ACRONYMS AND ABBREVIATIONS

APP	Accident Prevention Plan
ASTM	American Society for Testing and Materials
bgs	Below Ground Surface
BMP	Best Management Practices
BTEX	benzene, toluene, ethylbenzene, xylenes
CFR	Code of Federal Regulations
COR	Contracting Officer's Representative
CQCP	Construction Quality Control Plan
CTO	Contract Task Order
cu ft	Cubic Feet
DGA	Dense Grade Aggregate
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EHS	Environmental, Health, and Safety
ELAP	Environmental Laboratory Accreditation Program
EM	Engineer Manual
EPP	Environmental Protection Plan
ERP	Environmental Remediation Program
ERSM	Environmental Restoration Site Manager
E&SC	Erosion and Sediment Control
FEAD	Facility Engineering and Acquisition Division
ft	Feet/Foot
HERO	Hazards of Electromagnetic Radiation to Ordnance
HSWA	Hazardous and Solid Waste Amendment
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IDOT	Indiana Department of Transportation
IM	Interim Measure
IMR	Interim Measures Report
IMWP	Interim Measure Work Plan
in.	Inch(es)
LDPE	low-density polyethylene
mg/kg	Milligrams per Kilogram
MIDLANT	Naval Facilities Engineering Command Mid-Atlantic
mph	Miles per Hour
NAVFAC	Naval Facilities Engineering Command
NIRIS	Naval Installation Restoration Information Solution
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NTR	Navy Technical Representative
NSA	Naval Support Activity
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration

OWS	Oil Water Separator
oz	Ounce(es)
PCBs	Polychlorinated Biphenyls
PM	Project Manager
POL	petroleum, oil, and lubricant
PPE	personal protective equipment
QA	Quality Assurance
QC	Quality Control
RAC	Remedial Action Contract
RCRA	Resource Conservation and Recovery Act
RDM	Regional Data Manager
RFI	RCRA Facility Investigation
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SOW	Statement of Work
sq ft	Square Feet
SSHO	Site Safety and Health Officer
SWCD	Soil and Water Conservation District
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
SVOCs	semi-volatile compounds
TAL	target analyte list
T&D	Transportation and Disposal
TMP	Traffic Management Plan
TPH	total petroleum hydrocarbons
TSCA	Toxic Substance Control Act
TtEC	Tetra Tech EC, Inc.
USACE	United States Army Corp of Engineer
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
WMP	Waste Management Plan
WQC	Water Quality Certification

1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) was contracted by the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic (MIDLANT) under Remedial Action Contract (RAC) N62470-13-D-8007, Contract Task Order (CTO) WE38 to perform remediation and restoration activities at the Polychlorinated Biphenyl (PCB) Capacitor Burial/Pole Yard, also known as Solid Waste Management Unit (SWMU) 17/04, at Naval Support Activity (NSA) Crane, Crane, Indiana. A Site Vicinity Map and a Site Location Map of SWMU17/04 are provided in Figures 1-1 and 1-2, respectively. This Interim Measures Work Plan (IMWP) and supporting appendices were prepared to present the operational approach for successful completion of the project. The IMWP has been prepared based on the revised Statement of Work (SOW) dated August 11, 2015, the negotiation conference calls between NAVFAC MIDLANT and TtEC on September 8 and 14, 2015, and the email received from NAVFAC MIDLANT on September 17, 2015. Construction activities to be conducted under this CTO were developed to remove additional PCB impacts in soil and sediment that have been identified following prior interim measures at SWMU 17/04 as described in Section 1.1.

The deliverables listed in the SOW prior to construction activities include the preparation and submittal of an IMWP. This IMWP includes a Site Plan, Traffic Management Plan (TMP), Project Schedule, Waste Management Plan (WMP), Environmental Protection Plan (EPP), Erosion and Sediment Control (E&SC) Plan, and Sampling and Analysis Plan (SAP). The following plans were developed and submitted to the Navy under separate cover as internal documents: Accident Prevention Plan (APP), and the Construction Quality Control Plan (CQCP). A Storm Water Pollution Prevention Plan (SWPPP) will be submitted to the Martin County Soil and Water Conservation District (SWCD) for review, and an SWCD approval letter with an Notice of Intent (NOI) will be submitted to Indiana Department of Environmental Management (IDEM) in accordance with National Pollutant Discharge Elimination System (NPDES) General Permit Rule Program, Rule 5 (327 IAC 15-5-1) Storm Water Runoff Associated with Construction Activity permitting requirements. The existing Stream Restoration Plan (Cardno, 2014) will continue to serve for this IMWP, since the remedial excavation activities within the stream bed, to be conducted under this IMWP, are the located within the footprint of previous remedial excavation activities. Following the completion of interim measures, a Final Report (Interim Measures Report [IMR]) will be developed and submitted.

This Work Plan is organized into the following sections.

- Section 1.0 – Introduction - includes the site description and project objectives
- Section 2.0 – Site Work - details the scope of work and project schedule (Appendix A)
- Section 3.0 – Traffic Management Plan - details procedures to control and maintain orderly movement of vehicles and heavy equipment throughout the project site
- Section 4.0 – Interim Measures Report - describes report to be prepared which will document all interim measures and any deviations from the approved IMWP
- Section 5.0 – Records Management - details the procedures for managing and submitting data

- Section 6.0 – References used to prepare this IMWP
- Appendix A – Project Schedule - details timeframes to complete project milestones
- Appendix B – WMP - presents the waste management practices and procedures to be followed to manage all waste streams generated during field work
- Appendix C – EPP - describes the procedures for compliance with environmental requirements
- Appendix D – SAP - details sampling and analytical requirements to be followed during remedial action tasks
- Appendix E – Floodplain daily reports and laboratory analytical reports

1.1 Site Description and History

NSA Crane occupies 62,463 acres (approximately 98 square miles) in the southern portion of Indiana. The base is situated approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville Kentucky, immediately east of Crane Village and Burns City (Figure 1-1).

Much of NSA Crane is forested and deeply incised with natural drainage channels (ditches) and streams. The surrounding vicinity is sparsely populated and consists mainly of wooded areas or farm land.

SWMU 17/04, which is positioned in the northwestern portion of NSA Crane (Figure 1-1), has been in operation since before the late 1940s. Historical activities at SWMU 17/04 included storage of electrical capacitors (some PCB containing), storage of electrical transformers (some PCB containing), reported burial of capacitors (some PCB containing), and storage of creosote-impregnated utility poles (some PCB containing, presumably, as a result of leaking transformers). An aerial view of SWMU 17/04 showing the degree of vegetation, associated buildings, as well as roads, other nearby buildings, and utility corridors can be seen in Figure 1-2. The topography as well as nearby tributaries leading to nearby drainage channels are shown in Figure 1-3.

Historical operations, mainly in the open lot north of Building 357 (B-357) and Building 2721 (B-2721), at SWMU 17/04 led to the release of PCBs into nearby soils, sediments, and bedrock. Investigations of PCB contamination at B-2721 started as early as 1987; soil and sediment at SWMU 17/04 have been investigated extensively since then. Interim Measures (IM) were recently in two phases from April 2013 through September 2014 at SWMU 17/04 including excavation of soil and sediment known to be impacted with greater than one (1) milligram per kilogram (mg/kg) of total PCBs. Details of the two phase IM are summarized in the 2013 Final IMWP for SWMU 17 (Tetra Tech, 2013) and the 2014 Interim Measures Report SWMU 17 – PCB Capacitor Burial/Pole Yard (Tetra Tech, 2014).

Following completion of the IM, post-excavation sampling revealed that PCBs were still present at SWMU 17/04 within the upper elevations of Ditch 3. As a result, Tetra Tech conducted an additional investigation in 2015 to further delineate PCB impacts. The results of this investigation are summarized in the January 2016 SWMU 17 Additional PCB Source Delineation Sampling Technical Memorandum (Tetra Tech, 2016). Tetra Tech identified two main areas of PCB impacts: (1) soil and sediment in the immediate vicinity of the concrete culvert at the top of Ditch

3, and (2) the segment of Ditch 3 between Sediment Trap No. 1 and No. 3 with a majority of the impacts located between Sediment Traps No.1 and No. 2 (Tetra Tech, 2016).

Additionally, PCB concentrations exceeding one (1) mg/kg were identified in a soil and gravel layer beneath a concrete slab which was used to support a former oil water separator (OWS). The OWS area is located approximately 15 feet (ft) northwest of B-2721. Historical documents confirm the OWS was removed circa 1987. The remaining 12 inch (in.) thick concrete slab was found during trenching activities in 2015 approximately four (4) ft below ground surface (bgs). Elevated concentrations of PCBs were identified in soil samples collected from the stained soil and gravel layer beneath the concrete slab (Tetra Tech, 2016).

1.2 Project Objective

The primary objective of this CTO is to conduct an interim measure to remove soil, sediment and bedrock with concentrations of PCBs greater than one (1) mg/kg in accordance with the Toxic Substance Control Act (TSCA) High Occupancy Standard, 40 Code of Federal Regulations (CFR) 761.61. This cleanup goal is the result of negotiations with the United States Environmental Protection Agency (USEPA) and is protective of human health and ecological receptors. The primary tasks associated with the completion of the objectives for this project include the following:

- Floodplain sampling
- Mobilization and site setup
- Clearing and grubbing
- Pre-excavation surveying and underground utility locating
- Removal of soil, sediment, and/or bedrock within eight excavation areas
- Post-excavation confirmatory sampling
- Sediment handling and management
- Waste characterization and off-site transportation and disposal (T&D)
- Site restoration
- Operations and Maintenance (O&M) of erosion and sediment control measures
- Demobilization
- Reporting

This IMWP has been prepared for the remedial action construction activities at SWMU 17/04 in accordance with the revised SOW dated August 11, 2015.

1.3 Regulatory Authority

In October 1980, NSA Crane was granted interim status subject to operating requirements and applicable technical standards found in Title 40 of the CFR, Part 265 to operate as a Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, storage, or disposal facility. NSA Crane submitted a Hazardous Waste Management Report as part of the corrective action program requirements established in the 1984 RCRA Hazardous and Solid Waste Amendment (HSWA). Several RCRA Facility Investigations (RFI) were conducted to characterize the potential for releases of hazardous waste or constituents from approximately 100 SWMUs, including SWMU 17 (Tetra Tech, 2002).

In December 1989, the USEPA granted NSA Crane a Final RCRA/HSWA storage permit. USEPA renewed the permit in 1995. In 2001, the USEPA authorized the IDEM as responsible for RCRA Subtitle C hazardous waste rules, including hazardous waste storage and Corrective Action Permits. IDEM renewed the Corrective Action Permit on October 18, 2001. Currently, corrective actions at SWMU 17 will be regulated under the USEPA/IDEM Work Sharing Agreement for Corrective Action Activities.

All work conducted during this remedial action will be performed per the requirements of the RCRA storage permit IN5170023498. Handling and disposal of PCB-contaminated soil and sediment will be conducted in accordance with TSCA. All work will be performed in conformance with applicable and appropriate Department of Defense (DOD) guidance and policy for the Navy Environmental Remediation Program (ERP), and will consider all site documentation and reports to date.

1.4 Schedule

The current schedule proposes the mobilization of the field team at the beginning of May 2016, with completion of field work approximately three months later. The project schedule is provided as Appendix A. The floodplain sampling event was completed as a separate mobilization per the approved SAP.

2.0 SITE WORK

The scope of work for this project includes all activities necessary to prepare the work areas for pre-excavation layout survey, soil/sediment/bedrock excavation and T&D, removal and replacement of existing concrete pipe, post-excavation sampling, backfilling, stream restoration, and O&M of vegetation installed as part of stream restoration activities.

Specific details of how the work will be organized and conducted to meet the objectives and performance criteria designed to ensure the quality of the work are discussed in the following sections.

2.1 Pre-Construction Activities

Upon approval of this work plan, procurement for all necessary equipment, materials, and subcontractors required to implement the remedial action will be initiated. It is anticipated that subcontractors will be utilized during the following activities:

- Trailer hook-up (electrician)
- Land surveying
- Utility locating
- T&D of excavated materials

- Backfill supply
- Analytical laboratory

2.1.1 Clearances, Permits, Notifications, and Meetings

2.1.1.1 *Utility Clearance*

TtEC will request a utility mark-out through the Indiana "Call Before You Dig" system (Indiana 811 at (800) 382-2544) no less than 72 hours prior to the commencement of excavation and floodplain sampling activities. TtEC will conduct a field inspection approximately one week prior to the commencement of intrusive activities to verify the locations of utilities in preparation for all subsequent construction operations. In addition, TtEC will coordinate with NSA Crane's Environmental Manager for utility clearance verifications where needed. All markings will be maintained throughout the project; updated utility mark-outs will be requested as needed. TtEC will procure a third party utility locating subcontractor to confirm utilities within the excavation areas. TtEC will notify the Navy if any underground utilities are anticipated to interfere with excavation or sampling activities.

2.1.1.2 *Permits*

Construction activities within SWMU 17/04 will require acquisition or renewal of several permits prior to initiating field activities. TtEC will obtain an IDEM Storm Water General Permit as construction activities at SWMU 17/04 will disturb a cumulative total area of land greater than one acre. A SWPPP that complies with all procedures and requirements of Indiana Rule 5 General Permit (327 IAC 15-5) Storm Water Run-Off Associated with Construction Activity, will be submitted to the Martin County SWCD for review a minimum of 30 calendar days prior to the start of construction. Following approval by the Martin County SWCD, the SWCD approval letter, NOI Form, applicable fees, and proof of public notification in a newspaper will be submitted to IDEM. A copy of the SWPPP will be kept onsite throughout the duration of the project, and will be continually updated as regulations require. A Notice of Termination Form will be submitted to IDEM following construction activities to confirm the work was completed in compliance with Rule 5.

In compliance with IDEM and the US Army Corp of Engineers (USACE) rules and regulations, TtEC will perform interim measures at SWMU 17/04 under an amended version of the existing IDEM 401 Water Quality Certification (WQC). The existing 401 WQC will be modified to include: sediment and bedrock removal in a portion of Ditch 3, and soil removal at the storm water culvert at the Ditch 3 headwaters and at the oil/water separator area. Additional permits from the USACE are not required, since the existing USACE Jurisdictional Determination and Nationwide Permit No. 38, Cleanup of Hazardous and Toxic Waste are still applicable. The USACE will receive a copy of the IMWP figures and be apprised of additional activities at SWMU 17/04. These permits are required any time a project will impact a wetland, stream, river, lake, or other watercourse of the United States.

Additionally, the following permits will be acquired by TtEC prior to commencement of any field activities:

- Safety and Building Availability Permit (obtained from the Navy)
- Digging Permit (obtained from the Navy)
- Hot Work Permit (obtained from the Navy)
- Hazards of Electromagnetic Radiation to Ordnance (HERO) Permit (approval for portable radios) (obtained from the Navy)
- Tree Clearing Permit (obtained from the Navy if trees larger than 3 in. in diameter need to be removed)

2.1.2 Notifications

TtEC will notify the Navy Contracting Officer's Representative (COR), Environmental Restoration Site Manager (ERSM) and Facility Engineering and Acquisition Division (FEAD) via email and/or telephone when each SWMU 17/04 field work task will commence.

2.1.3 Pre-Construction Meeting

TtEC will facilitate one pre-construction meeting to be held at NSA Crane prior to mobilization to SWMU 17/04. The specific location will be arranged by the Navy FEAD representative, ERSM or COR. Attendees will include TtEC, Navy COR, ERSM, and the FEAD Navy Technical Representative (NTR). The following topics will be discussed at the meetings:

- Overall approach to site work
- Access/security requirements
- Work restrictions
- Staging areas
- Schedule and specific tasks included
- Review of the IMWP
- Reporting requirements for field reports to the COR and NTR

2.2 Floodplain Sampling Results

Overland flow of the Ditch 3 stream into the adjacent floodplain areas between Sediment Trap No. 2 and the intersection of Ditch 11 occurs occasionally during large rainfall events. A sampling area of approximately 4,000 square feet (sq ft) along Ditch 3 was developed to assess PCB impacts within this area. Results of the March 2016 sampling event are provided below.

2.2.1 Floodplain Sampling Results

Between March 28th and March 31, 2016 TtEC personnel and subcontractor, IO Environmental, collected 80 soil samples from the 40 sample locations shown on Figure 2-1. As mentioned in Section 1.4, a separate SAP outlining this sampling event was developed and submitted to the

USEPA. TtEC collected a total of 40 surface (0-0.5' bgs) and 40 subsurface samples (target depth of 1.5'-2.0' bgs) within the floodplain area, plus quality assurance (QA)/quality control (QC) samples. TtEC and IO Environmental personnel collected the subsurface samples with a hand auger to a depth of two (2) ft bgs. A portable GPS unit was used to record the coordinates of sampling locations.

The samples collected from the 0-0.5' bgs intervals were analyzed via 5-day turnaround time for total PCBs by EPA Method 8082A and the subsurface samples were placed on hold. If the surface soil sample PCB results were above 1 mg/kg, then the corresponding subsurface sample was analyzed for PCBs.

Table 2-1 and Figure 2-1 present the floodplain sampling analytical results. The laboratory analytical reports are provided in Appendix E. As shown on Figure 2-1, six excavation areas within the floodplain sampling area are proposed for excavation. Four of these areas (Areas 9.1, 9.2, 9.4, and 9.6) have PCB concentrations between 1 mg/kg and 50 mg/kg and were identified for non-TSCA level soil removal and disposal. The two remaining areas (Areas 9.3 and 9.5) have PCB concentrations above 50 mg/kg and were identified as requiring soil removal and disposal as TSCA level waste. Descriptions of the proposed areas to be excavated are discussed further in section 2.6.

2.3 Mobilization and Site Preparation

Upon acceptance of the Project Plans, the TtEC Project Manager (PM) will coordinate mobilization of field personnel. TtEC will mobilize a field office trailer, a craft trailer, a conex box, portable toilets, hand washing facilities, a 21,000-gallon frac tank, heavy equipment (including but not limited to haul and dump trucks, excavators, loaders, and water truck), timber mats (for temporary creek crossing), and potable water (dispenser in trailer). TtEC will also mobilize all necessary equipment for a pipe and/or pump around-around system which may be used to isolate or divert the stream during removal activities within Ditch 3.

Power for the field office trailer will either be hard wired by a licensed electrician, or powered by a portable generator. Staging areas (including decontamination, material storage, and equipment laydown) and the sediment handling area are shown in the Site Layout Plan (Figure 1-3). All visitors to the site including TtEC, its subcontractors, and Navy personnel will be required to sign in and out at TtEC's site trailer. Access to the SWMU 17/04 work area will not be provided to unauthorized persons.

TtEC will perform site-specific training for on-site personnel assigned to this project. The purpose of this training is to ensure on-site personnel fully understand the operational procedures and methods used by TtEC, which includes individual duties, proper equipment testing and operation, and all safety and environmental concerns associated with operations. Training will be conducted by the Site Superintendent and Site Safety and Health Officer (SSHO).

2.3.1 Pre-Construction Surveys

Prior to the commencement of any intrusive activities at SWMU 17/04, TtEC's land surveyor (professional land surveyor in the State of Indiana) will perform a topographic survey to document existing conditions at the locations specified for disturbance and note in advance any discrepancies that require adjustment. In addition, the surveyor will mark and delineate each excavation area as shown in Figure 2-2. Post-excavation surveys during backfilling will be conducted to ensure the stream is restored to grade and to document the extent of the excavations.

2.3.2 Haul Route and Construction Entrance

The proposed on-site haul route, shown on Figure 1-3, will be used for material and equipment delivery, personnel and subcontractor staff travel, and off-site waste disposal. The designated on-site routes support the appropriate temporary staging of trucks and containers, and staging of contractor facilities and materials. This haul route has been selected to minimize congestion and adverse impacts to the facility and the local communities. The proposed off-site haul route showing NSA Crane weigh scales, as shown on Figure 2-3, will be used by haul trucks during T&D efforts. This map also shows entrance gates and access to the SWMU 17/04 project site. The TMP is further detailed in Section 3.0.

Once the haul routes are approved by the Navy, the onsite route will be posted and clearly marked for hauling vehicles entering and exiting the site (including signage to direct traffic). TtEC does not anticipate the need for flaggers. TtEC will document the pre-existing conditions of the haul route and staging area.

The construction of the onsite temporary haul route will be underlain by a geotextile, overlain by a 6 inch layer of stone and gravel. In addition, TtEC will ensure construction entrances, underlain by geotextiles overlain with additional 6-inch layer of stone and gravel is graded to connect the site with NSA Crane facility roads. It is estimated that TtEC will use approximately 500 tons of ¾ in. C Dense Grade Aggregate (DGA) on the proposed on-site haul routes. As the temporary construction road will be outside of the excavation area, stone and geotextile will not come into contact with contaminated soil. After completion of the interim measures, the haul routes will be restored to their original conditions and the imported stone will be removed and either recycled on-site or disposed of off-site. The geotextile will be disposed of as construction debris. TtEC's Site Superintendent will also drive the proposed routes as final confirmation that no weight limitations exist over any crossings or culverts.

2.3.3 Staging Areas

Staging areas will be established prior to intrusive work and will include a decontamination pad, material storage area, equipment laydown area, and sediment handling pad. The decontamination pad will be used to clean equipment used to excavate and transport contaminated soils and sediments throughout the site. The pad will be lined, bermed, and sized to accommodate all the equipment to be used at the site. Contaminated materials removed from the equipment will be disposed off-site with the excavated soil and sediment. Any retained wash water generated from equipment washing activities will be sampled and disposed off-site at an appropriate treatment facility.

A material storage area will be established to store containers of detergents and vehicle maintenance fluids (oil, grease, antifreeze, hydraulic fluid, fuel, etc.). This pad will be lined with a 40 mil low-density polyethylene (LDPE) liner, bermed, and sized to contain 110 percent of the volume stored in the area. A low point will be designed to allow for monitoring and collection of any container that may spill or leak.

A sediment handling pad will be constructed to dewater excavated sediments, if warranted. The sediment handling pad will be constructed to accommodate excavated sediments and loading equipment, as necessary. Dimensions and construction elements of the sediment handling pad are described in Section 2.6.1. A double layer of erosion and sediment control consisting of a silt fence backed up by straw bales will be border the downgradient side of the sediment handling pad.

TtEC will collect a composite sample from underneath the footprint of the sediment handling pad prior to installation to establish pre-existing PCB concentrations in the underlying soil. Following removal efforts, TtEC will again collect a composite sample in the underlying soils to confirm the lining system did not fail during IMWP implementation.

The use of the haul route and locations of the staging areas will be confirmed by TtEC with the Navy during the pre-construction meeting.

2.3.4 Clearing and Grubbing

It is anticipated that tree clearing and grubbing activities will be required at the top of Ditch 3 around the concrete pipe and potentially along Ditch 3 in areas that have been impaired through erosion. Clearing will be performed to allow for safe access and to facilitate the movement of heavy equipment to prescribed work areas. Temporary access trails established during previous removal efforts will be cleared if necessary. Every effort will be made to conduct the required tree clearing within the allowed time period of October 1st through March 31st.

Any trees greater than three (3) in. diameter will require permission from the Navy prior to removal. Trees that are cut to one (1) ft or greater above ground surface will be disposed of as non-hazardous waste. Tree stumps that are excavated will be disposed of according to the PCB concentration level of the soil from which they were removed. It is anticipated that approximately 20 tons of material will be disposed of during clearing activities.

2.3.5 Erosion and Sediment Control Installation

IMWP activities will require the use of best management practices (BMPs) for E&SC. Suitable E&SC measures will be installed as appropriate near areas to be disturbed to prevent migration of sediments and to control surface flow. Prior to any intrusive activities, TtEC will install E&SC measures in accordance with the approved E&SC Plan and SWPPP.

2.4 Erosion and Sediment Control Plan

The purpose of E&SC measures are to prevent pollutants from leaving the construction site and entering waterways or environmentally sensitive areas during and after construction. This E&SC Plan has been developed in accordance with the guidelines defined in the Indiana Storm Water Quality Manual (IDEM, 2007) (Manual), and the approved SWPPP. This E&SC Plan, as shown on Figure 2-4, has been prepared prior to the initiation of construction activities to address anticipated worksite conditions. The control measures depicted on the site E&SC Plan (Figure 2-4) and described in this narrative should be considered the minimum measures required to control erosion, sedimentation, and storm water runoff at the SWMU 17/04 project site.

Since construction is a dynamic process with changing site conditions, it is TtEC's responsibility to manage the site during each construction phase so as to prevent pollutants from leaving the site. This may require TtEC to revise and amend the E&SC Plan during construction to address varying site and/or weather conditions, such as adding or realigning E&SCs, to ensure the E&SC Plan remains compliant with the IDEM Rule 5 General Permit and the IDEM 401 WQC. Records of these changes will be properly documented. Even if practices are correctly installed on a site according to the approved plan, the site is only in compliance when erosion and sedimentation are effectively controlled and maintained throughout the entire site.

2.4.1 Erosion and Sediment Control Measures

All of the excavation areas associated with SWMU 17/04 are located within or adjacent to the Ditch 3 stream. Surface water runoff from the disturbed areas within the stream will migrate into Boggs Creek, which discharges into Lake Gallimore, formed by Boggs Creek No. 1 Dam, and eventually flows into the East Fork White River. As a result, proper E&SC measures will be required to maintain the integrity of the stream and prevent any contamination from migrating outside of the excavation areas. Such measures to be implemented include, but are not limited to: silt fence, straw wattles, straw bales, reinforced construction entrances, erosion blankets, permanent/temporary seeding, pump around diversion systems and check dams. Figures for E&SCs are also included in the SWPPP.

The following E&SC devices will be installed as necessary, and under the direction of the TtEC-appointed Erosion and Sediment Control person (qualified person), anticipated to be the Environmental Manager as described in the EPP. A "qualified person" is a person knowledgeable in the principles and practices of erosion, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact storm water quality, and the skills to assess the effectiveness of any storm water controls selected and installed to meet the requirements of the permit.

The vegetative stabilization practices and structural control measures that may be implemented during interim measures at SWMU 17/04 are summarized below.

2.4.1.1 *Vegetation Stabilization Practices*

The vegetative stabilization practices for this project are listed in Table 2-2. The specifications for proper installation and maintenance of these stabilization practices can be found in Chapter 7 of the Manual. The installation of vegetative stabilization practices are further detailed in the SWPPP

2.4.1.2 *Structural Controls Measures*

Several different structural controls may be used to control the quality of the storm water exiting the site. The primary structural control measures are described in Table 2-3. The specifications for proper installation and maintenance of the following structural stabilization practices can be found in Chapter 7 of the Manual. The installation of structural E&SCs are further detailed in the SWPPP.

E&SCs will not be removed until approved by the Navy. Specific locations for BMP installation will be determined in the field based on site conditions. Figure 2-4 shows the anticipated locations where control measures will be placed. The specifications for proper installation and maintenance of these E&SC practices can be found in the Manual and the SWPPP

2.4.2 Inspection and Maintenance

All temporary E&SC practices will be completely installed and functioning prior to any earth disturbing activities. All storm water controls will be installed in accordance with good engineering practices, including applicable design specifications, which may be found in manufacturer specifications and/or the Manual. Any departures from such specifications will be provided, justified, and demonstrated to reflect good engineering practices.

2.4.2.1 *Inspections*

E&S controls, as well as storm water control measures, disturbance areas, staging areas exposed to precipitation, and construction entrances will be inspected and documented once per seven (7) calendar days and within 24 hours of every 0.5 in. of rainfall event and/or after a significant amount of runoff or snowmelt. A sample inspection form, to be completed for each inspection, is provided as an attachment to the SWPPP. Any required repairs will be made immediately.

Minimum Frequency – Each of the following areas must be inspected:

a. All areas that have been cleared, graded, or excavated and that have not yet completed stabilization
b. All storm water E&SC measures installed at the site
c. Construction material, waste, borrow, or equipment storage, and maintenance areas that are exposed to precipitation
d. All areas where storm water typically flows within the site, including temporary drainage ways designed to divert, convey, and/or treat storm water

e. All points of discharge from the site
f. All locations where temporary or permanent soil stabilization measures have been implemented
g. All locations where vehicles enter or exit the site

Qualified Personnel – The TtEC QC Manager will perform inspections, or will designate a qualified person. A "qualified person" is a person knowledgeable in the principles and practices of erosion, sediment, and pollution prevention controls, who possesses the skills to assess conditions at the construction site that could impact storm water quality, and the effectiveness of any storm water controls selected and installed to meet the requirements of the permit.

Recordkeeping Requirements - All records of inspections, including records of maintenance and corrective actions, will be documented in a logbook and maintained at the site. A sample inspection form is provided as an attachment to the SWPPP. Inspection records must include the date and time of the inspection, and the inspector's name, signature, and contact information. This log book will be available at the site at all times for inspection by duly authorized officials including NSA Crane personnel and IDEM.

2.4.2.2 *Maintenance*

Maintenance procedures for E&SCs and storm water management structures/facilities are described in the SWPPP and in the Manual. These controls will prevent, under normal weather conditions, both the movement of soil materials and the intrusion of sediment-laden discharges into environmentally sensitive areas.

E&SCs will be cleaned and maintained by TtEC; after a rainstorm; and/or whenever maintenance is required for any control measure as specified in the SWPPP or the Manual. E&SC measures will remain in place until all disturbed earth has been securely stabilized and accepted by the Navy.

2.5 Spill Mitigation Procedures

Potential non-storm water discharges anticipated during IMWP implementation activities include dewatering liquids, wash water resulting from decontamination efforts associated with field equipment and vehicles, fuel and lubricant spills from vehicle fueling, lubrication, and maintenance, and spills of fertilizers and other flammable substances.

All decontamination fluids generated from equipment washing activities will be collected in a lined decontamination pad. These fluids will be collected from the lined pad, analyzed, and sent to an appropriate off-site treatment facility. All containers of detergents, decontamination fluids, and vehicle maintenance fluids will be stored within an enclosed, lined, diked area along with the equipment fuel, which may be stored in cans. This area, referred to as the materials storage area, will be bermed and lined with a 40-mil LDPE and will be sized to contain 110 percent of the volume stored within the area.

All vehicle fueling, lubrication, and maintenance will be performed utilizing drip pans to contain any spills that may occur, or within the decontamination pad to contain spills. Refueling will be conducted in accordance with the EPP (Appendix C). Refueling will be done with equipment turned off and the person refueling must carefully keep watch and be able to immediately stop the flow when the equipment fuel level is sufficient. Refueling of heavy equipment on-site will be via a fuel delivery vendor or by TtEC personnel via a truck bed-mounted small United States Department of Transportation (USDOT) specification fuel tank.

Project vehicles and construction equipment will be inspected daily by the equipment operator. If there is any equipment leaking or deficiencies that could cause a spill observed (e.g., loose fittings, damaged hose, etc.), the equipment will be taken out of service and repaired.

TtEC will establish spill prevention and control measures to reduce the chance of spills, stop the source of spills, contain and clean-up spills, and dispose of materials contaminated by spills. TtEC will establish and make highly visible location(s) for the storage of spill prevention and control equipment and provide training for personnel responsible for spill prevention and control on the construction site. A spill kit for petroleum, oil, and lubricant (POL) related spills will be located on-site in active work zones and refueling areas in sufficient quantity to provide for cleanup of a reasonably anticipated spill that could occur during the project onto soil (e.g., hydraulic hose rupture or small spill during refueling of small equipment). Waste from spill cleanup will be managed in accordance with BMPs. All spills will be reported to the NSA Crane Environmental Department.

2.6 Excavation Activities

Excavation work will be performed using a medium to large sized excavator in accordance with Occupational Safety and Health Administration (OSHA) excavation regulations as described in 29 CFR 1926.651, Section 25 of USACE Engineering Manual (EM) 385-1-1, and TtEC Excavation and Trenching Procedure, Environmental Health and Safety (EHS) 6-3. Excavation equipment and haul trucks will not travel through the impacted soils or sediment. Timber mats will be utilized during temporary creek crossing.

During the excavation of Ditch 3 (Figure 2-4), storm water will be diverted from excavation areas in a sequential approach utilizing check dams constructed of 25-pound sand bags, or an appropriate size, with either pipe-around or active pump-around systems within Ditch 3 to move water around the proposed excavation areas. After each excavation segment has been completed, post-excavation samples will be collected as detailed in Section 2.6.2.

The excavation of the culvert, at the headwater of Ditch 3, will be planned during a 2-3 day period of no projected rainfall to prevent storm water discharge. To prevent storm water discharge into an open excavation, potential storm water will be diverted from the end of the culvert to Ditch 3 by a temporary pipe.

All of the excavations will remain open for a several day period prior to backfilling, as receipt of laboratory analytical results will be needed prior to backfilling. Exposed bedrock will be inspected and photographed. Post-excavation bottom sample locations will be biased towards any fractures or visual staining. All post-excavation sample data will be forwarded to the Navy for review. If PCB concentrations are detected above one (1) mg/kg in post-excavation samples, TtEC will await direction from the Navy. Additional excavation beyond the SOW will not be performed without Navy concurrence. Any open excavation will be barricaded when left unattended.

Once an excavation is deemed complete (designed horizontal and vertical extent has been achieved), and post-excavation data indicates PCB concentrations are less than or equal to one (1) mg/kg, the area will be backfilled and restored to its pre-existing condition. Areas disturbed within the stream during remediation activities will be restored in accordance with the approved Stream Restoration Plan (Cardno, 2014). An overview of excavation areas requiring sediment, soil, and/ or bedrock removal within SWMU 17/04 is presented in Figures 2-2, 2-5, and 2-6. For ease of review, excavations areas including TSCA level waste have had the analytical results and the associated delineation samples from previous investigations overlain on the figures. These data points were originally presented in the 2016 Technical Memorandum. These excavation areas were delineated following sampling conducted during/after Phase 2 of the 2013/2014 IM and the additional PCB delineation efforts conducted in 2015. It is estimated that an approximate total of 207 tons of TSCA and 352 tons of non-TSCA waste will be transported off-site for disposal. This waste will include all removed sediment, sediment amendment materials, soil, bedrock, sediment handling pad construction materials, and concrete culvert piping. Details for each removal area are described in the following sub-sections.

TtEC does not anticipate personnel entering open excavations. In the event entry into an excavation is necessary, the excavation will be safely sloped/benched for entry or will be adequately shored as designed by a Qualified Person. Excavations greater than four (4) ft in depth are generally considered to be confined spaces and require special entry conditions and permits to be in place if entry by workers is required. The Competent Person (to be determined) must implement a means of shoring if adjacent structures require protection or could be compromised as designed by a Qualified Person. The Competent Person will evaluate soil type and other potential hazards to make determinations on shoring and/or safe sloping. During excavation, the Competent Person will be present on-site and be responsible for conducting daily inspections of the excavation and overseeing excavation safety as contained in TtEC's EHS Procedure 6-3. Exploratory techniques, such as "pot-holing," may be performed to ensure that any excavation near identified utilities can be performed safely.

Dust suppression measures during soil disturbing activities such as excavation will be performed as necessary in such a way as to minimize the generation of dust and may include light misting with water spray as necessary.

2.6.1 Sediment Management

All removed sediments will be live loaded into haul trucks (sealed tailgates) to a sediment handling pad (see Figure 1-3) for dewatering and segregation. The sediment handling pad will be constructed to have dimensions of 50 ft wide x 40 ft long. The perimeter will be bermed with approximately 36 concrete blocks (2.5 ft x 2.5 ft x 5 ft) lined with 16 ounce (oz.) non-woven geotextile, 40-mil LDPE liner pre-manufactured panel, 16 oz. non-woven geotextile, and a six (6) in. layer of 1 ½ in. DGA working surface. A portion of the pad will be physically separated by an interior berm of concrete blocks and separately lined with 40-mil LDPE to serve as a handling area for potentially TSCA level sediments. The sediment pad will be bermed so that run-off water will not come in contact with stockpiled soil during storm events. The downgradient exterior of the pad will be bordered with both a silt fence and straw bales. When excavation is not active, during evenings, weekends, and storm events, soil piles will be covered with poly sheeting anchored or ballasted with sand bags. Prior to placement of the pad, TtEC will sample the soil to establish pre-existing PCB concentrations in underlying soils. Additionally, samples will be collected following the pad removal to verify the liner system did not fail during containment.

Once at the handling area, TSCA and non-TSCA level sediments will be segregated and amended to enhance the dewatering process to meet disposal facility requirements, if required. If needed, a non-hazardous amendment, such as sawdust or Calciment® will be selected in the field. Following the selection of the type of amendment, Material Safety Data Sheets will be provided to the Navy, if warranted. An excavator with a long stick attachment will be used to mix the additive into the sediment. Any ponded water will be collected within a geotextile lined sump located at the lowest corner point within the pad to allow for gravity drainage. Water will be pumped from the sediment pad into a nearby 21,000-gallon frac tank. All water generated during dewatering will be transported off-site for disposal at an appropriate facility based upon analytical results.

TtEC personnel will visually monitor the progress of the mixing process and secure a grab sample, per disposal facility requirements, for paint filter testing to assess whether additional amendment is required to meet the landfill criteria per the WMP, which is provided as Appendix C. Once it has been established by the test results that the amended sediments are suitable for off-site shipment, an excavator will be used to load trucks with amended sediment for transportation to an off-site disposal facility based upon analytical results.

2.6.2 Post-Excavation Confirmatory Sampling

Post-excavation composite confirmatory soil, sediment, or bedrock samples will be collected after excavation activities to verify attainment of the cleanup standard. With Navy COR concurrence to determine the need for additional excavation, the goal for each excavation area is to remove material until total PCB concentrations are less than or equal to one (1) mg/kg in accordance with the TSCA High Occupancy Standard, 40 CFR 761.61.

TtEC will use Envirogard® or equivalent immunoassay field test kits, with a detection limit of 0.5 mg/kg PCBs, to screen soil, sediment and rock fragment composite samples on-site for total PCBs, during removal activities at Excavation Areas 1 through 8 (discussed in Sections 2.6.4 - 2.6.10), prior to submittal of samples for off-site laboratory analysis. These test kits will allow quick identification of elevated total PCB impacts. For non-TSCA excavation areas, it is anticipated that post-excavation confirmation samples will be collected at a frequency of 1 sample per up to 100 linear ft area of side wall and 1 sample per 1,200 sq ft of area excavation floor. Please note, for TSCA excavation areas, a sidewall sample will be collected from each sidewall that is less than 100 linear ft, in addition to 1 sample per 1,200 sq ft of area excavation floor. The post-excavation sampling procedure for determining the limits of excavation for each Excavation Area will be as follows:

1) For each excavation sidewall area of 100 linear ft or excavation floor area of 1200 sq ft five (5) random locations will be sampled. These five (5) samples or aliquots will be combined into one composite sample that will be tested for PCBs on-site by an immunoassay field kit. The five sample or aliquot locations within the 100 linear ft sidewall area or within the 1200 sq ft excavation floor area will be marked with flags.
2) If the immunoassay field kit PCB test results are below 1 mg/kg PCBs, then TtEC will send that composite sample, as a post-excavation confirmatory sample, to the offsite laboratory for total PCB analysis. If the laboratory results are below 1 mg/kg, then the excavation in that sidewall or excavation floor is considered complete. Once all the side wall and excavation floor post-excavation confirmatory sample lab results for an Excavation Area are below 1 mg/kg, then subsequent surveying activities and backfilling will proceed in that Excavation Area.
3) If the either laboratory results for a post-excavation confirmatory sample or the immunoassay test kit results of a composite sample are above the 1 mg/kg PCB criteria, then individual aliquots from the field locations, previously marked by flags, will be field screened using the immunoassay tests kits to identify the sample location or locations that contain PCB impacts above 1 mg/kg PCB. If the field screen of individual aliquots fails to identify the area(s) above 1 ppm, then those individual aliquots may be sent to the laboratory for analysis to confirm if an area(s) is above 1 ppm. All laboratory results will be considered definite data for making final decisions for the site.
4) If PCB impacts extend beyond the Excavation Areas defined in this IMWP, the Navy COR will be contacted to determine if additional excavation is warranted. Further excavation will commence only at the direction of the Navy COR.
5) The above sampling procedure will be repeated until the composite immunoassay and confirmatory laboratory sample results, for all side wall and excavation floors areas in each Excavation Area, are below 1 mg/kg.

Samples will be collected with disposable scoops or equivalent. Post-excavation samples will be sent to an off-site DoD accredited laboratory for total PCBs analysis (as Aroclors) via 24-hour turnaround time. Further details on sampling procedures and the collection of QC samples are provided in the SAP.

2.6.3 Excavation Area #1: Soil/Sediment Excavation Surrounding Concrete Pipe at Top of Ditch 3

In Excavation Area #1, shown in Figure 2-5, sampling conducted during and after completion of Phase 2 of the 2013/2014 IM confirmed that PCB impacted soils are present above, below, and adjacent to the concrete pipe at the headwaters of Ditch 3. In this area, TtEC will excavate soil/ sediment to a width of six (6) ft on either side of the 18 ft length of concrete pipe. Soil below the pipe will be excavated down to the bedrock interface, which is at approximately 11 ft bgs. Side walls will be cut back as appropriate to allow for safe working conditions. TtEC will also remove and replace the existing 18 ft length of concrete pipe and associated sediment. The void space in the pipe is 57 cubic feet (cu ft) and has an outside diameter of 2.5 ft. The pipe will be replaced with the same dimension and will be made of similar material. The six (6) ft length of pipe extending to the outfall will be reused, if possible. If there are visual indications of contamination on the exterior of the pipe it will not be re-used. The estimated amount of combined soil, sediment, and concrete sewer pipe to be removed in Excavation Area #1 around the outfall pipe is 156 tons.

Additionally, TtEC will remove sediment from the end of the concrete outfall pipe to a distance of 10 ft downgradient of the outfall pipe in the direction of Ditch 3. The area will be excavated to the bedrock interface (estimated at two (2) ft bgs) and will be 8.5 ft wide. Underground electrical utilities in this area may prohibit excavation to bedrock. Underground utility obstructions will be marked in the field prior to any intrusive work. The estimated amount of sediment to be removed in Excavation Area # 1 downgradient of the outfall pipe is an additional 10 tons.

Following field kit testing activities, TtEC will collect post-excavation composite confirmatory samples using methodologies as described in Section 2.6.2. It is anticipated that four (4) side wall samples and two (2) excavation floor samples will be collected from this area. Excavated soil and demolition debris associated with the outfall are, expected to be TSCA-level waste (greater than or equal to 50 mg/kg total PCBs) and non-TSCA level waste (greater than one (1) mg/kg and less than 50 mg/kg total PCBs), and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.4 Excavation Area #2: Bedrock Excavation underneath Concrete Pipe at Top of Ditch 3

In Excavation Area #2, depicted in Figure 2-5, previous investigations confirmed that PCBs have penetrated into the shallow bedrock (a few inches below the bedrock surface) and for a horizontal distance of 10 ft downstream from the end of the concrete outfall pipe. In this area (8.5 ft wide by 28 ft long), TtEC will excavate bedrock to a depth of one (1) ft. The width of the excavation will be centered on the pipe’s longitudinal center so that three (3) ft of bedrock on either side of the pipe (2.5 ft outside diameter) will be removed. The total width of the excavation will be 8.5 ft (3 ft. side soil + 3 ft side bedrock + 2.5 ft pipe = 8.5 ft wide). The total length of the excavation, 28 ft, extends under the entire 18 ft length of concrete outfall pipe to be removed, at the top of Ditch 3, to an additional 10 ft downstream from the end of the outfall pipe. A medium to large sized excavator, equipped with an appropriately sized hydraulic hammer attachment, will be used to excavate bedrock. Any residual soil remaining on the bedrock will be removed by craft labor and with shovels. The estimated amount of combined bedrock and soil to be removed from in Excavation Area #2 is 14 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from side walls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that four (4) sidewall samples and one (1) excavation floor sample will be collected from this area. Excavated soil and rock from this area is expected to be TSCA and non-TSCA level waste and will be transported to the sediment handling pad prior to off-site disposal. Excavated bedrock will not require amendment prior to disposal.

2.6.5 Excavation Area #3: Ditch 3 Sediment Excavation from 10 ft Downstream of Outfall to Sediment Trap No.1

In Excavation Area #3, shown in Figure 2-5, elevated concentrations of PCBs were detected in sediment beginning 10 ft. downstream of the outfall to Sediment Trap No.1. TtEC will excavate sediment in a path that is eight (8) ft. wide and one (1) ft. deep (or shallower if bedrock is encountered at a shallower depth), beginning 10 ft. downstream of the outfall pipe and extending to Sediment Trap No. 1. Sediment Trap No. 1 is located approximately 70 ft. downstream of the concrete outfall pipe. The estimated amount of sediment to be removed in Excavation Area #3 is 27 tons.

Following removal activities, TtEC will collect post-excavation composite confirmatory samples using methodologies as described in Section 2.6.2. It is anticipated that six (6) side wall samples and one (1) excavation floor sample will be collected from this area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.6 Excavation Area #4A and #4B: Excavation of Retained Sediment within Sediment Traps No.1 and No.2

In Excavation Areas #4A and #4B, TtEC will excavate all accumulated sediment on the upstream side of previously installed Sediment Traps No.1 (Area 4A, Figure 2-5) and No.2 (Excavation Area 4B, Figure 2-6). Due to the upstream nature of PCB impacts in Ditch 3, it is assumed that sediments retained by these traps are also impacted. TtEC will excavate accumulated sediment to approximately one (1) ft deeper than the Ditch 3 stream bed. The amount and extent of sediment to be removed from these areas is contingent upon sediment accumulation at the time of removal efforts. The excavation limits will be determined in the field based off of the amount of retained sediment at the time of removal. However, it is not anticipated that sediment will be retained beyond 10 ft upstream of the traps. The estimated amount of sediment to be removed in Excavation Areas #4A and #4B is 6 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory samples using methodologies as described in Section 2.6.2. It is anticipated that one (1) sidewall sample and one (1) excavation floor sample will be collected from each area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Excavated sediment from this area will be sampled for PCBs and is expected to be non-TSCA level waste and will then be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.7 Excavation Area #5: Ditch 3 Sediment Excavation between Sediment Traps No.1 and No.2

In Excavation Area #5, depicted in Figure 2-6, elevated concentrations of PCBs within Ditch 3 have been identified since previous removal activities. Potential downstream migration of PCB impacts within Ditch 3 also have been demonstrated based on the results of previous sampling efforts. In Excavation Area #5, TtEC will excavate all of the sediment in Ditch 3 (from surface to bedrock) for the entire stream width from the downstream edge of Sediment Trap No. 1 to Sediment Trap No. 2. Stream Segment 6 has an average channel width of approximately six (6) ft and Segment 5 has an average channel width of approximately 11 ft (overall average estimated width = 8 ft). Sediment depths in this portion of Ditch 3 recently were measured to range from be four (4) to eight (8) in. (overall average estimated depth = 5 in.). The distance between Sediment Trap No.1 and Sediment Trap No.2 is estimated to be 650 ft long. The estimated total amount of sediment to be removed in Excavation Area #5 is 120 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory samples using methodologies as described in Section 2.6.2. The actual limits of excavation will be determined by post-excavation confirmatory sampling. However, it is anticipated that (48) sidewall samples and four (4) excavation floor samples will be collected from this area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Although the actual extent of TSCA level sediments will be determined in the field, it is estimated that approximately 220 ft of excavated sediment from 10 ft upstream of sample 17SD151 to 10 ft downstream of sample 17SD150 is expected to be TSCA-level waste and will be transported to the sediment handling pad for amendment prior to off-site disposal. The total estimated amount of TSCA level sediment to be removed from Excavation Area #5 is 40 tons. The remaining portion of sediment to be removed is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal. The total estimated amount of non-TSCA level sediment to be removed = 80 tons.

2.6.8 Excavation Area #6: Bedrock Excavation between Sediment Samples 17SD150 and 17SD151

In Excavation Area #6, investigations conducted during the 2015 PCB delineation sampling efforts confirmed the presence of PCB impacts within bedrock between sediment samples 17SD150 and 17SD151 (Tetra Tech, 2016). The locations of these samples are shown in Figure 2-6. In this area, TtEC will excavate bedrock to a depth of two (2) ft below the bedrock surface. The length of the excavation, expected to be approximately 190 ft, will span from 10 ft upstream of sample 17SD151 to 10 ft downstream of sample 17SD150. The average excavation width, of approximately six (6) ft, is the average stream width. The estimated amount of bedrock to be removed in Excavation Area #6 is 147 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that (14) sidewall samples and two (2) excavation floor sample will be collected from this area. Excavated material from this area is expected to be TSCA level waste and will be transported to the sediment handling pad, if required, prior to off-site disposal. Excavated bedrock will not require amendment prior to disposal.

2.6.9 Excavation Area #7: Residual Hotspot Excavation

Excavation Area #7 is a small area surrounding sample location 17SB075 (Tetra Tech, 2014) with PCB impacts that was not excavated during the previous remedial effort, as shown on Figure 2-6. Soil in this area was excavated and backfilled to approximately one (1) ft bgs; however, PCB contamination still remains present at the one (1) to 1.5 ft bgs interval (Tetra Tech, 2015). The location of this sample is shown on Figure 2-6. TtEC will excavate a 10 ft radius cylindrical volume to 2.0 ft bgs centered on the sample 17SB075. The estimated total amount of soil to be removed in Excavation Area #7 is 35 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that one (1) sidewall samples and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.10 Excavation Area #8: Excavation of Former Oil and Water Separator (OWS) Area

As detailed in the 2016 Technical Memorandum, the 12 in. thick concrete slab that supported the former OWS was uncovered during trenching activities. Some black staining within the soil and gravel layer below the concrete slab was observed. Soil samples collected from the stained soil within the trench had PCB concentrations ranging between 0.015 to 2.3 mg/kg (Tetra Tech, 2016). In the former OWS area, TtEC will remove soil and gravel from an area of approximately 70 sq ft to a depth of seven (7) ft bgs. Excavation Area #8 is shown on Figure 2-5. The estimated total amount of soil to be removed in Excavation Area #8 is 27 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory samples using methodologies as described in Section 2.6.2A minimum of one (1) sidewall samples and one (1) excavation floor sample will be collected from this area. Excavated materials from this area are expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.11 Excavation Area # 9.1: Floodplain Sampling Area North of Ditch 3

Excavation Area # 9.1 is located within the floodplain area, north of Ditch #3 and east of the oxbow in Ditch #3, as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.650 to 1.810 mg/kg. TtEC will remove soil from an area of approximately 706 sq ft to a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.1 is 98 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that two (2) sidewall samples along the 104 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.12 Excavation Area # 9.2: Floodplain Sampling Area East of Ditch 3 Oxbow

Excavation Area # 9.2 is located within the floodplain area, east of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.0078 to 1.650 mg/kg. TtEC will remove soil from an area of approximately 335 sq ft to a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.2 is 46 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that one (1) sidewall sample along the 90 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.13 Excavation Area # 9.3: Floodplain Sampling Area East of Ditch 3 Oxbow

Excavation Area # 9.3 is located within the floodplain area, east of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.423 to 55.60 mg/kg. TtEC will remove soil from an area of approximately 697 sq ft to bedrock, estimated at a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.3 is 65 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that two (2) sidewall samples along the 108 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.14 Excavation Area # 9.4: Floodplain Sampling Area South of Ditch 3 Oxbow

Excavation Area # 9.4 is located within the floodplain area, south of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.00863 to 2.0 mg/kg. TtEC will remove soil from an area of approximately 288 sq ft to a depth of one (1) ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.4 is 11 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that one (1) sidewall sample along the 85 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.15 Excavation Area # 9.5: Floodplain Sampling Area North of Ditch 3 Oxbow

Excavation Area # 9.5 is located within the floodplain area, north of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.423 to 55.60 mg/kg. TtEC will remove soil from an area of approximately 714 sq ft to bedrock, estimated at a depth of one (1) ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.5 is 26 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that two (2) sidewall samples along the 107 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.6.16 Excavation Area # 9.6: Floodplain Sampling Area, North of Ditch 3 Oxbow

Excavation Area # 3J.1 is located within the floodplain area, north of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6. As indicated in Table 2-1 and Figure 2-1, soil samples collected had PCB concentrations ranging between 0.579 to 8.560 mg/kg. TtEC will remove soil from an area of approximately 1496 sq ft to a depth of 1.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.6 is 83 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in Section 2.6.2. It is anticipated that two (2) sidewall samples along the 162 ft perimeter and two (2) excavation floor samples will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

2.7 Backfilling and Compaction

After post-excavation sample data determines that total PCB concentrations greater than one (1) mg/kg are no longer present in the excavation areas, each excavation area will be backfilled to existing grade as soon as practicable with clean fill, topsoil, stone and/or fluvial sediments deemed appropriate for the location. Removal areas outside of the stream will be backfilled with clean fill, where appropriate, and topsoil that is suitable for plant establishment. In removal areas within the stream where the bed is not at bedrock, crushed gravel/stone will be as placed as sufficient backfill in accordance with the Stream Restoration Plan. In removal areas where the stream bottom is at bedrock, fluvial sediments will be placed; in addition either native sandstone or limestone riprap will be installed to replace the excavated bedrock, however if native sandstone is available it will be preferred.

Post-excavation surveys, during backfilling will be conducted to ensure that the stream is restored to grade and to document the extent of excavation in Ditch 3 within the SWMU17/04. Following the excavation and post-excavation sampling of each segment of Ditch 3, the licensed professional surveyor, who conducted the initial site survey, will conduct a post-excavation survey to document the extent of excavation and a post-backfilling survey to document that the excavated section was restored to the original grade.

TtEC will ensure that backfill materials delivered from the off-site borrow source will have characteristics similar to the native SWMU17/04 soils, stone, and sediments. Since the backfill material is to be placed on a RCRA site, the backfill source material will be tested per USEPA 530/F-93/004 and EPA 600/4-79/020 for target analyte list (TAL) metals, pesticides and herbicides, semi-volatile compounds (SVOCs), benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbons (TPH), and PCBs. Analytical results will be compared to established contaminant screening criteria of PCB less than 1 mg/kg, TPH less than 50 mg/kg, and Residential Regional Screening Levels. A grain size analysis, discussed below under In-Stream Excavation Backfill, will also be conducted on the fill. No soil testing for borrow soil shall be required for aggregates of particles passing No. 16 sieve if it is less than 5 percent. Borrow pit certifications should be provided to the Contracting Officer. Any exceedances shall be approved by the Contracting Officer.

Backfill materials shall meet physical characteristics and compaction requirements in the areas described below.

<u>In-Stream Excavation Backfill:</u> In areas where the stream bed is not at bedrock, crushed gravel/stone will be placed as backfill. In removal areas where the stream bottom is at bedrock, fluvial sediments will be placed. Compaction will be conducted by track-walking across the backfill area or using an excavator bucket until surface deflection is no longer present. Native stone will be installed to replace excavated bedrock. Large rocks that were removed from the streams will be cleaned and saved to help re-establish the stream areas. The backfill material to be used to re-establish the stream beds will satisfy the Indiana Department of Transportation (IDOT) requirements for bank-run sands and gravel. Backfill material being placed within the stream shall meet the following characteristics.

- American Society for Testing and Materials (ASTM) D 2487, Classifications GW, GP, GM, SW, SP, or SM
- ASTM D 4318, Liquid limit, 35 maximum
- ASTM D 4318, Plasticity index, 12 maximum
- Maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve
- Maximum particle size of two (2) in.

<u>Excavation Area #7 and Floodplain Excavation Backfill (Areas 9.1 through 9.6):</u> Clean fill will be placed and compacted in 12 in. lifts, as necessary. The remaining six (6) in. will be backfilled with topsoil suitable for plant growth. Compaction will be conducted by track-walking across the backfill area or using an excavator bucket until there is no more surface deflection present.

Backfill material being placed within the within the floodplain (area outside of stream) shall meet the following characteristics.

- ASTM D 2487, Classifications GW, GP, GM, SW, SP, or SM
- ASTM D 4318, Liquid limit, 35 maximum
- ASTM D 4318, Plasticity index, 12 maximum
- Maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve
- Maximum particle size of one (1) in.

If PCB impacts are identified within a portion(s) of the floodplain and are subsequently excavated, the area(s) will be backfilled as described above.

<u>Excavation Area #8 Backfill:</u> Clean fill will placed and compacted in 12 in. lifts, as necessary. The remaining six (6) in. will be backfilled with topsoil suitable for plant growth. The area will be compacted to 95% of ASTM D 698 by track-walking across the backfill area or using an excavator bucket. Backfill material being placed within the OWS area (near building 2721) shall meet the following characteristics.

- ASTM D 2487, Classifications GM, SW, SP, SM, SC, ML, ML-CL, or CL
- ASTM D 4318, Liquid limit, 40 maximum
- ASTM D 4318, Plasticity index, 25 maximum
- Maximum particle size of two (2) in.

2.8 Waste Management

The WMP, provided as Appendix C, presents the waste management practices and procedures to be followed to manage all waste streams generated during performance of the field activities during Interim Measures at SWMU 17/04 including the following types of wastes.

- Impacted soil, bedrock, and sediment
- Used disposable personal protective equipment (PPE), used disposable sampling equipment as well as other contaminated debris such as used sediment handling pad materials
- Liquids from sediment dewatering operations
- Decontamination water (personnel and/or equipment decontamination)
- Clean construction debris (miscellaneous wood, dunnage, cardboard, etc.)
- General trash (office and lunch room waste)
- Sanitary waste (portable toilet and hand washing facilities)
- Spill cleanup media and waste (if spill cleanup is required)

Haul and disposal trucks will not require wheel wash because the trucks will not drive in contaminated areas (driving surfaces will not have any contaminated sediments on them). Any incidental spillage from the haul trucks will be picked up immediately by laborers and the haul truck will have a sealed tailgate. TtEC will ensure that all trucks are equipped with appropriate and functioning liners and tarps prior to loading and departing the site.

The WMP identifies on-site waste management activities to be conducted such as waste characterization, waste accumulation and containerization, waste profiling, marking, and labeling of waste containers, as well as manifesting and off-site transport and disposal of contaminated material and recordkeeping requirements. The WMP ensures that waste minimization practices are followed, to the extent practicable, to reduce the volume of waste that will be generated, stored, and removed from the site for disposal, including proper use and control of hazardous materials.

It is anticipated that project waste will be both non-TSCA (PCBs <50 mg/kg) and TSCA (PCBs > 50 mg/kg) level waste based on prior sampling and analytical results; however, waste characterization sampling at the point of generation will ultimately determine the waste classification. Handling of TSCA and/or hazardous waste is addressed in the WMP.

2.9 Site Restoration

TtEC will restore approximately 1.9 acres of disturbed land following backfill activities. The disturbed areas listed below will be restored by TtEC via hydroseeding and mulching.

- Excavation Area 1 (along length of concrete outfall pipe)
- Excavation Area 7
- Excavation Area 8
- Excavation Areas 9.1 through 9.6
- Sediment handling pad
- Main haul road
- Haul roads through woods

TtEC’s restoration subcontractor, Cardno JFNew, will restore approximately 0.5 acres of the creek that will be disturbed during remediation activities. These disturbed in-stream areas listed below will be restored following backfill efforts and the work will be completed in accordance with the approved Stream Restoration Plan (Cardno, 2014).

- Excavation Area 1 (from edge of concrete outfall pipe to 10 ft beyond)
- Excavation Area 2
- Excavation Area 3
- Excavation Areas 4A and 4B
- Excavation Area 5
- Excavation Area 6

All disturbed areas as well as staging areas will be restored to existing conditions in accordance with the Manual. In-stream restoration efforts, as detailed in the approved Stream Restoration Plan, will include placement of native seed mix, fluvial sediment and stone, use of erosion blankets, straw mulch, and fiber roll (for steep slopes), and installation of a maximum of 350 bare root trees. Trees will be installed in a dormant state once remediation and restoration activities have been completed.

2.10 Sediment Trap Removal

Upon completion of excavation activities, TtEC will remove Sediment Traps No. 2 and No. 3 along Ditch 3 (Figure 2-2) in their entirety to restore the ditch to more natural hydrology. The upper three (3) ft of Sediment Trap No. 1 will be removed so that its maximum top elevation is one (1) ft above Ditch 3 elevation at that point. Additionally, TtEC will remove debris from downstream of Sediment Trap No. 3; this trap washed out during a previous storm event allowing rock and other Sediment Trap No. 3 materials to scatter downstream from the trap location. Sediment trap removal areas (Sediment Traps No. 2 and No. 3) will be restored per the approved Stream Restoration Plan.

2.11 Demobilization

Upon completion of site restoration, TtEC will begin demobilization activities. Demobilization will include the following activities.

- Site cleanup
- Removal of all temporary structures, appurtenances and equipment
- Removal of all disposable items, hand washing stations, and portable toilets
- Demobilization of construction equipment
- Navy approval and acceptance of site conditions

TtEC and subcontractor personnel will demobilize from the site upon completion of all site restoration activities and after the demobilization activities listed above are performed. This final demobilization will be implemented when it is determined by the TtEC PM to be most practical and cost effective.

3.0 TRAFFIC MANAGEMENT PLAN

This section describes the control and orderly movement of vehicles and equipment at the SWMU 17/04 project area during site activities including the mobilization and demobilization of site personnel, equipment, and materials, daily entry of site personnel and visitors, and entry and egress of waste disposal trucks.

There are currently four access gates to NSA Crane which include the Main Gate referred to as the Bloomington Gate (Gate House No. 1) in the north, Burns City Gate (Gate House No. 2) in the west, Bedford Gate (Gate House No. 3) in the east, and Crane Gate (Gate House No. 4) in the northwest. Access to SWMU 17/04 will start at the Crane Gate (Gate House No.4) and will follow the route as shown in the TMP (Figure 2-3). TtEC and its Subcontractors will not travel within restricted areas of NSA Crane. Upon arrival to SWMU17/04 all contractors will be required to sign in/out at TtEC's field trailer.

Each haul truck will be weighed at the Defense Reutilization and Marketing Office (DRMO) (building 1940) scale upon every arrival and prior to every departure from the site. The scale operates during normal business hour (0630 to 1500 hours; 6:30 am to 3:00 pm), and weight tickets are available. The DRMO scale is the only authorized scale that will be used. If haul trucks are over legal road weights, they will not receive a manifest and will be required to return to SWMU 17/04 to have some waste material removed and re-weighed prior to departure from the site.

Temporary haul routes will be marked by temporary, signs and other methods, as needed, to direct haul truck traffic and alert other drivers and pedestrians of construction activities. TtEC will install timber mats to facilitate transport over the creek during removal activities. Haul routes within SWMU 17/04 are shown in Figure 1-3.

3.1 Schedule and Hours of Operation

The project schedule is provided in Appendix A and outlines the anticipated timeline associated with construction activities. It is estimated that the total duration of the project will be approximately two (2) months. Field activities will be conducted between the hours of 0700 and 1700 hours, five (5) days per week, Monday through Friday. Work day schedules will be carefully coordinated with the Navy.

3.2 Speed Limits

Truck traffic will adhere to the posted speed limits of the local public roads in the vicinity of SWMU 17/04. Within the project area, truck traffic will adhere to a speed limit of five (5) miles per hour (mph) unless otherwise designated.

3.3 Traffic and Construction Signage

Signs will be erected near the temporary construction entrance/exit. The intent of the signs will be to provide sufficient notice of the construction entrance/exit and warn traffic that trucks may be entering the roadway. Signs will also be erected within the SWMU 17/04 project area denoting the five (5) mph speed limit. Speed limit signs will be placed at the entrance and at several locations within the project area. The speed limit signs will be double-sided so that they can be visible when exiting the site.

Figure 1-3 depicts the proposed on-site travel routes for waste disposal trucks leaving SWMU 17/04 and trucks bringing imported backfill to SWMU 17/04. Figure 2-3 depicts an overview of NSA Crane including entrance gates, access routes to the SWMU 17/04 project area, and access routes for waste disposal trucks to the DRMO weigh scales within NSA Crane.

3.4 Drainage

Any existing drainage facilities near the construction entrance will be maintained to provide adequate drainage of the roadway.

3.5 Dust Control and Spillage

The surface areas within the SWMU 17/04 project area will be maintained at all times to minimize and control dust. Any material spilled or tracked onto the public roadway will be removed immediately.

All work areas will be maintained within the limits of work, staging areas, and along haul routes in order to prevent dust generation that could contribute to air pollution. Dust control will be accomplished by the sprinkling of water or a dilute solution (less than 0.05%) of water plus bio-degradable surfactant. Sprinkling, where used, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control will be performed as the work proceeds and whenever a dust nuisance or hazard occurs. It is understood that light bituminous treatment of the soil or work area is not an acceptable method of dust control.

4.0 INTERIM MEASURES REPORT

TtEC will prepare an IMR to document work activities accomplished at SWMU 17/04. The report will be submitted to the Navy for internal review prior to submittal to USEPA and IDEM as required by the SOW. The IMR will include the following items.

- A statement that the work was conducted in accordance with the IMWP, with any exceptions noted
- A summary of volumes of material shipped and disposed of at each location
- Copies of analytical reports from characterization of soil/waste (may be provided electronically within the report)
- Copies of Manifests/Bills of Lading, and certified weight slips (may be provided electronically within the report)
- Copies of Certificates of Treatment/Disposal (may be provided electronically within the report)

The IMR will be prepared per Navy Guidance in Documenting Milestones throughout the Site Closeout Process (March 2006) and Close-Out Procedures for National Priorities Sites USEPA 5409-R-98-016. In addition to the IMR, TtEC will provide Daily Field Activity Reports to be signed by both the Navy and TtEC at the end of each day. These reports will be generated to provide a summary of daily work activities completed.

5.0 RECORDS MANAGEMENT

TtEC will obtain access to Naval Installation Restoration Information Solution (NIRIS) and will submit all tabular and spatial data to NIRIS in accordance with current NIRIS standard operating procedures (SOPs). All analytical data generated by the laboratory will be reviewed by the TtEC Project Chemist to ensure the completeness of the reported data prior to submittal to NIRIS. NIRIS data submittals will be coordinated with the designated Regional Data Manager (RDM) for inclusion into NIRIS.

6.0 REFERENCES

Cardno, 2014, Stream Restoration Plan, SWMU 17 – Phase 2, Naval Facilities Engineering, Command, Midwest, Crane, Martin County, Indiana, January 28, 2014, Revised April 9, 2014.

IDEM, 2007. Indiana Storm Water Quality Manual, October.

Tetra Tech, 2002. Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) for PCB Capacitor Burial/Pole Yard Solid Waste Management Unit (SWMU) 17, NSWC Crane, Crane, Indiana, August.

Tetra Tech, 2013. Final Interim Measures Work Plan for SWMU 17, NSA Crane, Crane, Indiana, March 5.

Tetra Tech, 2014. Interim Measures Report for SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana

Tetra Tech, 2016. Draft Final Technical Memorandum for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana, January 13.

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TABLES

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Table 2-1 Floodplain Soil Sampling Results
WE38 NSA Crane, Crane , Indiana

Sample ID	Date Collected	AROCLOR 1016	AROCLOR 1221	AROCLOR 1232	AROCLOR 1242	AROCLOR 1248	AROCLOR 1254	AROCLOR 1260
		UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
FP-01-0-0.5	3/30/2016	69.6 U	78.9 U	69.6 U	153 U	92.8 U	78.9 U	678
FP-02-0-0.5	3/30/2016	19.2 U	21.7 U	19.2 U	42.2 U	25.6 U	21.7 U	55.3
FP-03-0-0.5	3/30/2016	17.3 U	19.6 U	17.3 U	38.0 U	23.0 U	19.6 U	251
FP-04-0-0.5	3/30/2016	18.5 U	20.9 U	18.5 U	40.6 U	24.6 U	20.9 U	33.4 J
FP-05-0-0.5	3/30/2016	18.1 U	20.5 U	18.1 U	39.8 U	24.1 U	20.5 U	163
FP-06-0-0.5	3/30/2016	18.2 U	20.6 U	18.2 U	40.1 U	24.3 U	20.6 U	71.2
FP-07-0-0.5	3/30/2016	87.3 U	99.0 U	87.3 U	192 U	116 U	99.0 U	632 J
FP-08-0-0.5	3/30/2016	19.1 U	21.6 U	19.1 U	42.0 U	25.4 U	21.6 U	282
FP-09-0-0.5	3/30/2016	690 U	782 U	690 U	1520 U	920 U	782 U	**8560**
FP-09-0.5-1	3/30/2016	85.3 U	96.6 U	85.3 U	188 U	114 U	96.6 U	928
FP-10-0-0.5	3/30/2016	19.1 U	21.6 U	19.1 U	42.0 U	25.5 U	21.6 U	56.9
FP-10-0-0.5-D	3/30/2016	19.0 U	21.6 U	19.0 U	41.9 U	25.4 U	21.6 U	361
FP-11-0-0.5	3/30/2016	196 U F1	222 U	196 U	430 U	261 U	222 U	**2320**
FP-11-0.5-1	3/30/2016	69.4 U	78.6 U	69.4 U	153 U	92.5 U	78.6 U	585
FP-12-0-0.5	3/30/2016	74.1 U	83.9 U	74.1 U	163 U	98.7 U	83.9 U	474
FP-13-0-0.5	3/30/2016	192 U	217 U	192 U	422 U	256 U	217 U	**3260**
FP-13-0.5-1	3/30/2016	70.6 U	80.1 U	70.6 U	155 U	94.2 U	80.1 U	579
FP-14-0-0.5	3/30/2016	16.8 U	19.0 U	16.8 U	37.0 U	22.4 U	19.0 U	8.63 U
FP-15-0-0.5	3/30/2016	364 U	412 U	364 U	800 U	485 U	412 U	**4940**
FP-15-1.5-2	3/30/2016	87.7 U	99.4 U	87.7 U	193 U	117 U	99.4 U	**1130**
FP-16-0-0.5	3/30/2016	177 U F1	201 U	177 U	390 U	236 U	201 U	**2000 F2**
FP-16-0.5-1	3/30/2016	69.6 U	78.9 U	69.6 U	153 U	92.8 U	78.9 U	848
FP-17-0-0.5	3/30/2016	6400 U	7250 U	6400 U	14100 U	8530 U	7250 U	**55600**
FP-17-0.5-1	3/30/2016	1590 U	1800 U	1590 U	3500 U	2120 U	1800 U	**12300**
FP-18-0-0.5	3/30/2016	19.9 U	22.6 U	19.9 U	43.8 U	26.6 U	22.6 U	41.8 J
FP-19-0-0.5	3/30/2016	72.0 U	81.6 U	72.0 U	158 U	96.0 U	81.6 U	423
FP-20-0-0.5	3/30/2016	17.2 U	19.5 U	17.2 U	37.9 U	22.9 U	19.5 U	8.83 U
FP-20-0-0.5-D	3/30/2016	17.4 U	19.7 U	17.4 U	38.2 U	23.1 U	19.7 U	8.91 U
FP-21-0-0.5	3/30/2016	88.6 U	100 U	88.6 U	195 U	118 U	100 U	943
FP-22-0-0.5	3/30/2016	19 U	21 U	19 U	42 U	25 U	21 U	180
FP-23-0-0.5	3/30/2016	19 U	21 U	19 U	41 U	25 U	21 U	13 J
FP-24-0-0.5	3/30/2016	19 U	21 U	19 U	41 U	25 U	21 U	67
FP-25-0-0.5	3/30/2016	18 U	20 U	18 U	39 U	24 U	20 U	86
FP-26-0-0.5	3/30/2016	350 U Q	400 U Q	350 U Q	770 U Q	470 U Q	400 U Q	**3700 Q**
FP-26-0.5-1	3/30/2016	17.7 U	20.0 U	17.7 U	38.9 U	23.6 U	20.0 U	176
FP-27-0-0.5	3/30/2016	17 U	20 U	17 U	38 U	23 U	20 U	66

Table 2-1 Floodplain Soil Sampling Results
WE38 NSA Crane, Crane , Indiana

Sample ID	Date Collected	AROCLOR 1016	AROCLOR 1221	AROCLOR 1232	AROCLOR 1242	AROCLOR 1248	AROCLOR 1254	AROCLOR 1260
		UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
FP-28-0-0.5	3/30/2016	7600 U Q	8600 U Q	7600 U Q	17000 U Q	10000 U Q	8600 U Q	**55000 Q**
FP-28-1.5-2	3/30/2016	352 U	399 U	352 U	775 U	470 U	399 U	**4070**
FP-29-0-0.5	3/30/2016	17 U	19 U	17 U	37 U	22 U	19 U	15 J
FP-30-0-0.5	3/30/2016	18 U	20 U	18 U	40 U	24 U	20 U	250
FP-30-0-0.5-D	3/30/2016	19 U	21 U	19 U	41 U	25 U	21 U	120
FP-31-0-0.5	3/30/2016	18 U	21 U	18 U	40 U	24 U	21 U	40
FP-32-0-0.5	3/30/2016	17 U	19 U	17 U	38 U	23 U	19 U	7.8 J
FP-33-0-0.5	3/30/2016	70 U	80 U	70 U	150 U	94 U	80 U	650
FP-34-0-0.5	3/30/2016	190 U J	220 U	190 U	420 U	260 U	220 U	**1400 J**
FP-34-1.5-2	3/30/2016	173 U	197 U	173 U	381 U	231 U	197 U	**1650**
FP-35-0-0.5	3/30/2016	710 U Q	810 U Q	710 U Q	1600 U Q	950 U Q	810 U Q	**5700 Q**
FP-35-1.5-2	3/30/2016	173 U F1	196 U	173 U	380 U	230 U	196 U	**1810 F2**
FP-36-0-0.5	3/30/2016	79 U	90 U	79 U	170 U	110 U	90 U	710
FP-37-0-0.5	3/30/2016	18 U	21 U	18 U	41 U	25 U	21 U	24 J
FP-38-0-0.5	3/30/2016	18 U	20 U	18 U	39 U	24 U	20 U	9.2 U
FP-39-0-0.5	3/30/2016	19 U	21 U	19 U	41 U	25 U	21 U	260
FP-40-0-0.5	3/30/2016	19 U	21 U	19 U	41 U	25 U	21 U	7.4 J
FP-40-0-0.5-D	3/30/2016	18 U	20 U	18 U	39 U	24 U	20 U	7.4 J

Notes:

EPA Method 8082A was performed for analysis. All results are reported as dry weight corrected.

Highlighted and bolded value above 1,000 ug/kg (or 1 mg/kg).

Deeper samples taken off hold and analyzed.

Associated equipment blank collected with these samples was not detected for all the analytes.

UG/KG - micrograms per kilogram

F1 - MS and/or MSD Recovery is outside acceptance limits.

F2 - MS/MSD RPD exceeds control limits.

J - Value is stimated.

Q - One or more quality control criteria failed.

U - Not detected above stated value.

Table 2-2 Vegetative Practices

Control Measure	Location	Description of Control Measure
Temporary Seeding	Disturbed areas that are brought to final grade outside of the optimal growing season for the permanent seed mixture (April 1 through June 16 or August 15 through October 15), if any such areas exist.	Utilizing a temporary seed mixture, a short-term vegetative cover will be established on disturbed areas that may be in danger of erosion, as applicable. The procedures and requirements for establishing temporary stabilization are presented in Chapter 7 of the Manual.
Mulching	Apply mulch within 14 days after final grade is reached or for disturbed areas where the construction activity has temporarily ceased for more than 21 days.	Temporary soil stabilization or erosion control practice where materials such as grass, wood chips, hay, etc., are placed on the soil surface. Mulching is addressed in Chapter 7 of the Manual.
Preservation of Natural Vegetation	Whenever practical.	Wherever possible, existing vegetation should be retained to minimize erosion potential and protect water quality. Preservation of natural vegetation is addressed in Chapter 7 of the Manual.
Permanent seeding	Disturbed areas that are brought to final grade.	Utilizing a permanent seed mixture, a permanent vegetative cover will be established on disturbed areas to protect soils from erosive forces. Permanent seeding is addressed in Chapter 7 of the Manual.

Table 2-3. Primary Structural Control Measures

Control Measure	Location	Description of Control Measure
Filter Fencing (silt fence)	Placed along the downslope sides of disturbed areas such as the sediment dewatering pad, laydown and staging areas, and haul roads. As an alternative to silt fence in appropriate locations, compost filter socks, straw wattles, and fiber rolls may be used.	Filter fencing consists of wooden posts with synthetic filter fabric stretched across the posts to provide a temporary sediment barrier. The lower end of the fence is vertically trench and covered with back fill. This prevents water from passing by the fence without being filtered. The fabric allows the water to pass off-site, while retaining the sediment on-site. Silt fencing is addressed in Chapter 7 of the Manual.
Straw Bales	May also be used instead of silt fence, as check dams, or installed to form a temporary containment area for storage of liquid materials. Can be used for drainage areas greater than 1 acre when applied to continuous grade, but less than 1 acre if concentrated flow.	Straw bales work much like silt fencing. They can be used to form a barrier or redirect water. They slow water down which results in less erosion and some settling. Unlike silt fence, straw bales do not allow water to flow through freely, thus they are used where detention, not just filtration, is necessary. Straw bales are addressed in in Chapter 7 of the Manual.
Straw Wattles, Compost Tubes, and Fiber Rolls	May also be used instead of silt fence or as check dams as appropriate. Can be used for drainage areas greater than 1 acre when applied to continuous grade, but less than 1 acre if concentrated flow.	Straw wattles, compost tubes, and fiber rolls work much like silt fencing. They slow water down which results in less erosion and some settling. These controls are addressed in in Chapter 7 of the Manual.

Control Measure	Location	Description of Control Measure
Construction Entrances/Exits	Placed as controlled site entrances to the limits of disturbance from the existing roads and paved storage area.	The purpose is to reduce the amount of sediment transported by construction vehicles onto facility and public roads. These entrance/exits are usually constructed by geotextile fabric and large stone/cobbles. The geotextile is laid down on the soil; the stone/cobbles are then applied on top of the fabric. The rough surface will shake and pull the soil off the tires. Construction entrances/exits are addressed in in Chapter 7 of the Manual.
Pump Around Diversion with Portable Dams / Piping	Placed in work areas situated within streams, channels, or lakes.	Used to divert or isolate stream flow during removal activities. Pump around diversion systems are addressed in Chapter 7 of the Manual.
Erosion Control Blanket	Placed along slopes and concentrated flow channels.	Provides temporary surface stabilization, prevents erosion by protecting the soil from rainfall impact, overland water flow, concentrated runoff, or wind. Erosion control blankets are addressed in in Chapter 7 of the Manual.

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FIGURES

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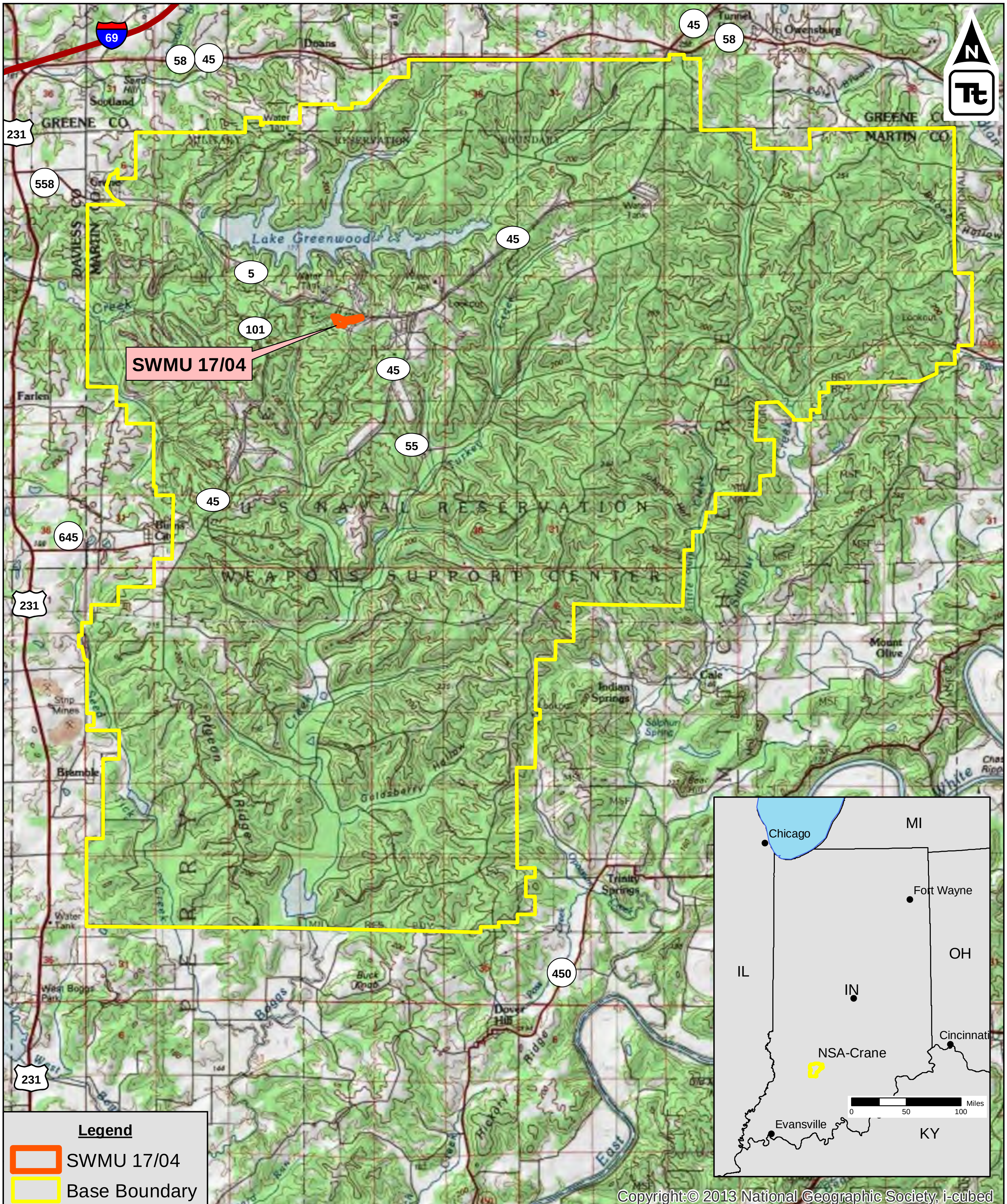

SCALE IN FEET

0 5,000 10,000

1 INCH = 10,000 FEET
(SCALE AT 8.5" X 11")

NAD 1983 STATEPLANE
INDIANA WEST FIPS 1302 FEET

NOTES:
1) Interstate 69 route from Indiana Dept of Transportation
2) Definitions:
- NSA = Naval Support Activity
- SWMU = Solid Waste Management Unit

TITLE:
SITE VICINITY MAP: SWMU 17/04
INTERIM MEASURES WORK PLAN

A
REVISION

PREPARED FOR:
NAVFAC

PREPARED BY:
TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

PROJECT:
N62470-13-D-8007 LANT-RAC

LOCATION:
NSA-CRANE, CRANE, INDIANA

PROJECT NO.:
106-4659

DATE:
06/08/2016

FIGURE:
Figure 1-1

(\\ltts153fs1) P:\NAVFAC - Naval Facilities Engineering Command\NSA-Crane Indiana\GIS\MXD\IMWP\Fig1-1_SWMU17_SiteVicinityMap.mxd 2016/06/08: jeff.dahoda

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1 INCH = 300 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 300 600

NAD 1983 STATEPLANE INDIANA WEST
FIPS 1302 FEET

NOTES:
1) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek.
2) Imagery from the USDA National Agriculture Imagery Program (NAIP), 1-m resolution, 2014, via the ArcGIS Image Server.

DEFINITIONS:
PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit

PREPARED FOR:
NAVFAC

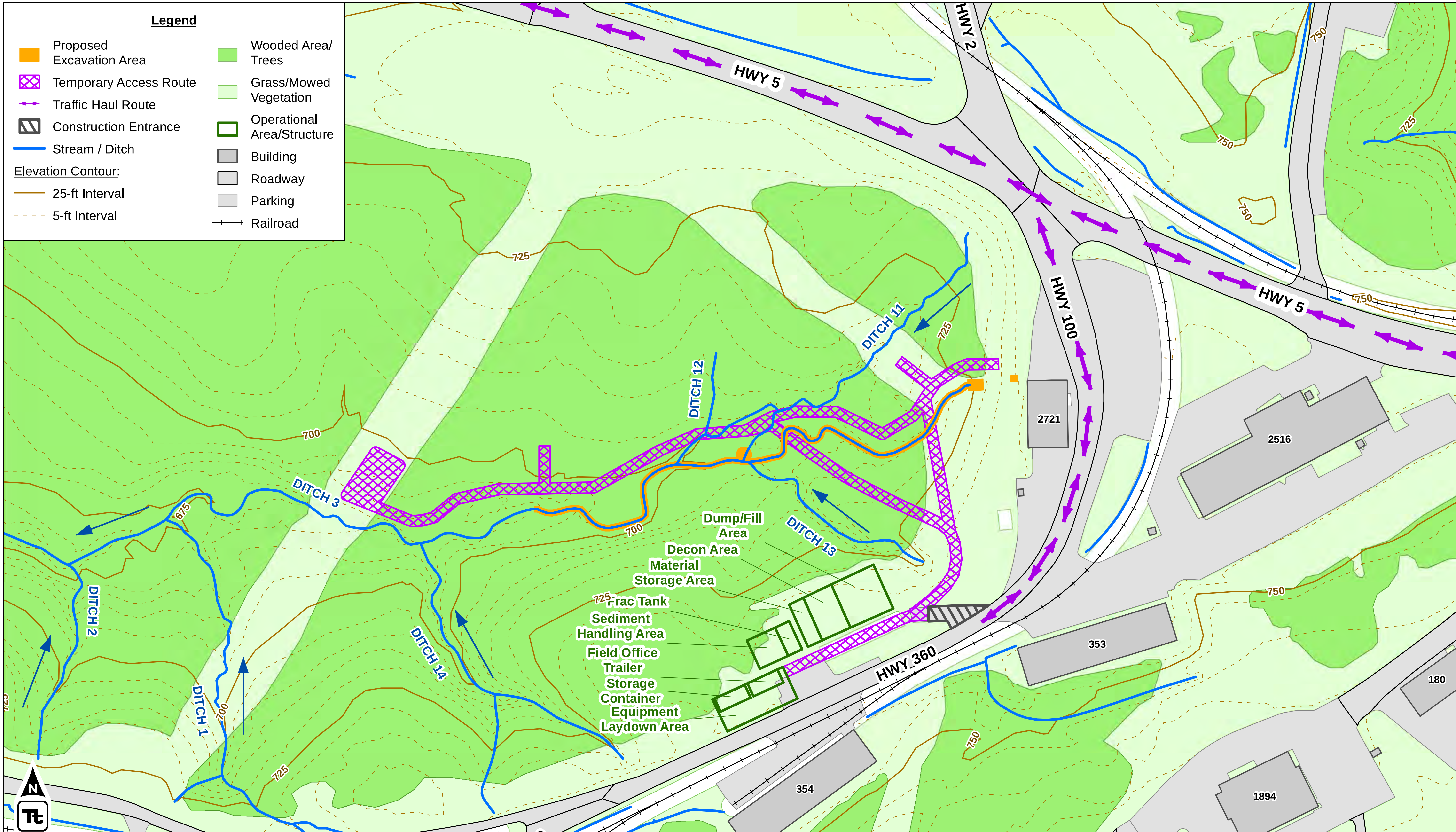
PREPARED BY:
TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE:
SITE LOCATION MAP
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

PROJECT:	PROJECT NO.:	FIGURE:
N62470-13-D-8007 LANT-RAC	106-4659	Figure 1-2
LOCATION: NSA-CRANE, CRANE, INDIANA	DATE: 06/08/2016	

(\\ltts153fs1) P:\NAVFAC - Naval Facilities Engineering Command\NSA-Crane Indiana\GIS\MXD\IMWP\Fig1-2_SiteLocMap.mxd 2016/06/08: jeff.dahoda



1 INCH = 120 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 120 240

NAD 1983 STATEPLANE INDIANA WEST FIPS 1302 FEET

NOTES:

1) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek.

DEFINITIONS:

PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit

PREPARED FOR:

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PREPARED BY:

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Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE:

SITE LAYOUT PLAN
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

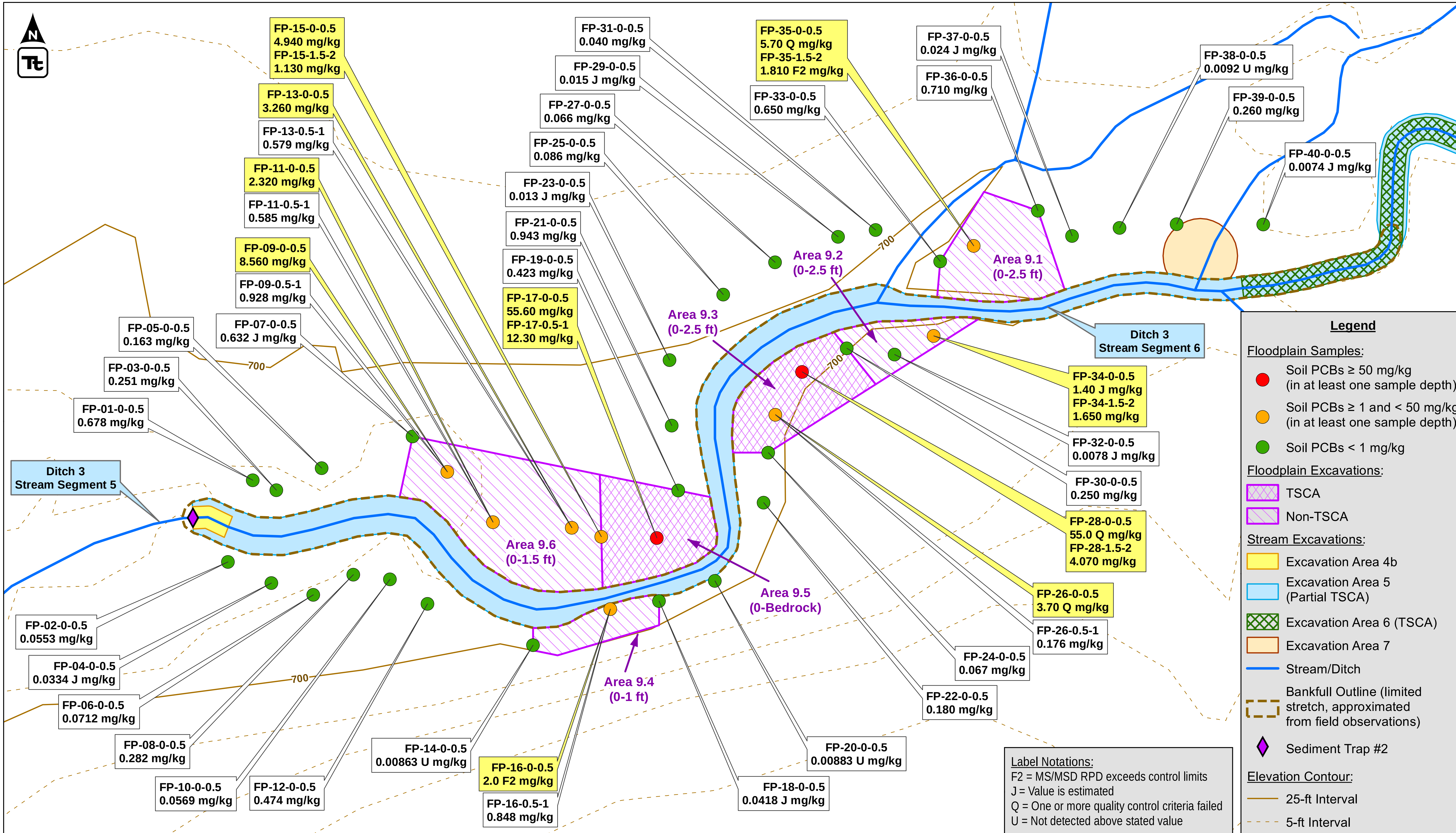
PROJECT: N62470-13-D-8007 LANT-RAC

PROJECT NO.: 106-4659

LOCATION: NSA-CRANE, CRANE, INDIANA

DATE: 06/08/2016

FIGURE: Figure 1-3



1 INCH = 25 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 25 50

NAD 1983 STATEPLANE INDIANA WEST
FIPS 1302 FEET

NOTES:
1) Tetra Tech samples were collected 03/30/2016 and results are for analyte AROCLOR 1260.
2) Yellow labels indicate sample exceeds TSCA screening criteria of PCB >1 mg/kg.
3) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek. Changes in the stream path noted in Tetra Tech field observations of 03/29/2016 have been implemented.

DEFINITIONS:
PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit
TSCA = Toxic Substances Control Act

PREPARED FOR:
NAVFAC

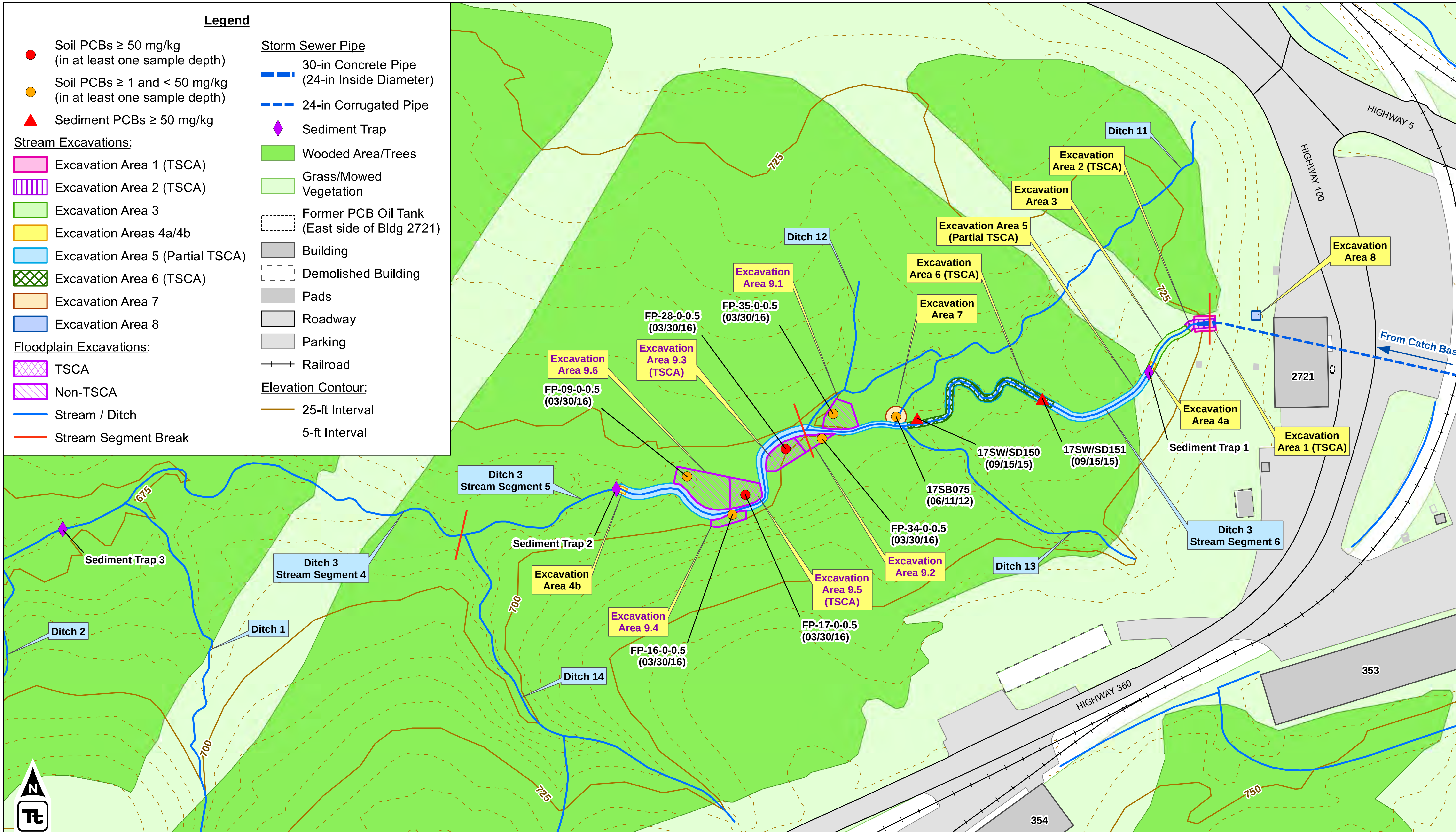
PREPARED BY:

TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE: FLOODPLAIN PCB SAMPLING & EXCAVATION AREAS
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

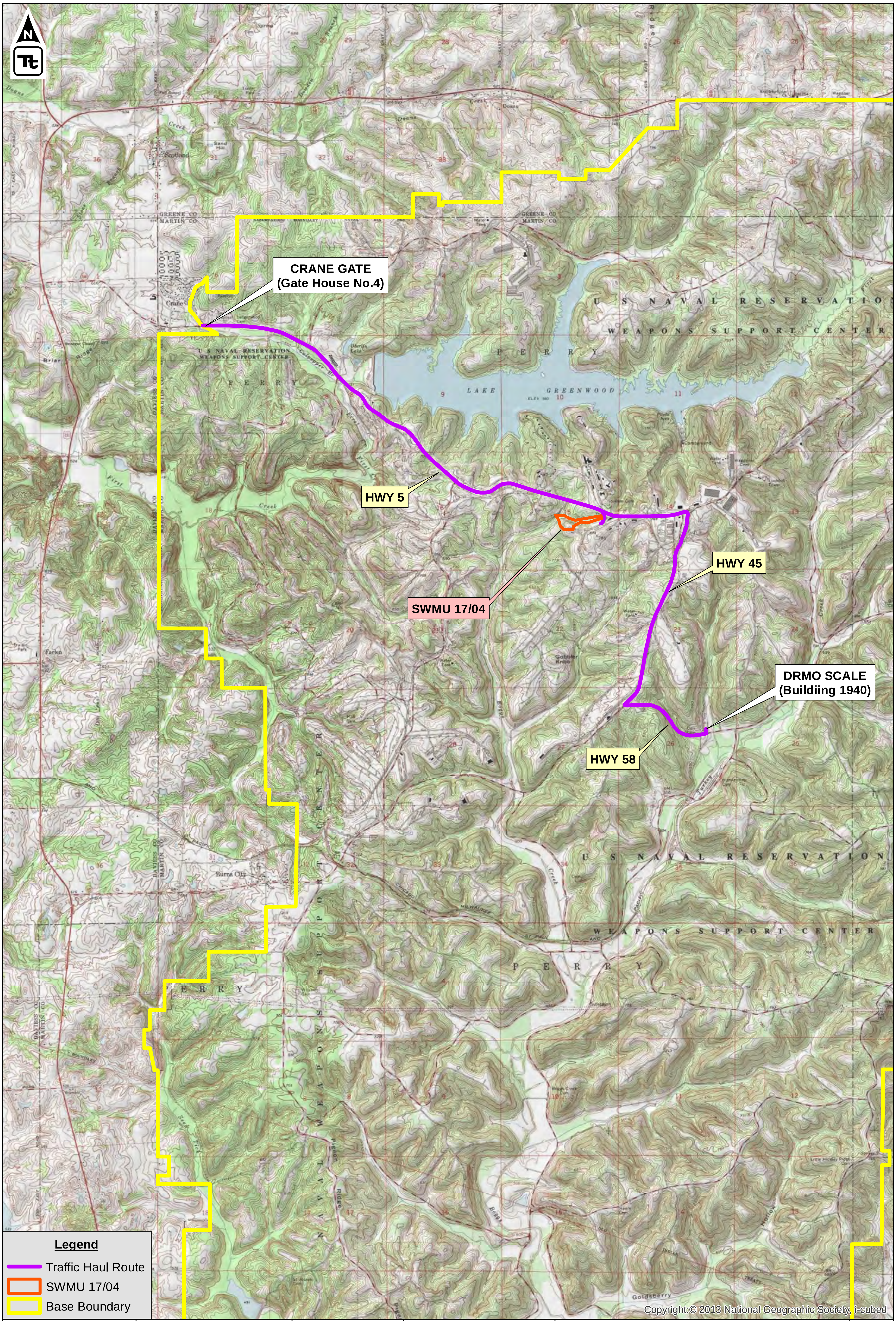
PROJECT: N62470-13-D-8007 LANT-RAC
PROJECT NO.: 106-4659
LOCATION: NSA-CRANE, CRANE, INDIANA
DATE: 06/08/2016
FIGURE: Figure 2-1



1 INCH = 90 FEET (SCALE AT 17" X 11") SCALE IN FEET 0 90 180 NAD 1983 STATEPLANE INDIANA WEST FIPS 1302 FEET	NOTES: 1) Previous soil, sediment and bedrock sampling locations and analytical results from: *Draft Final Technical Memorandum for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity, Crane, Indiana; TetraTech, January 13, 2016.* Recent samples collected 03/30/2016. 2) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek. Changes in the stream path noted in Tetra Tech field observations of 03/29/2016 have been implemented.	DEFINITIONS: PCB = polychlorinated biphenyl (CAS 1336-36-3) NSA = Naval Support Activity SWMU = Solid Waste Management Unit TSCA = Toxic Substances Control Act

PREPARED FOR: NAVFAC	PREPARED BY: TETRA TECH EC, INC. One Oxford Valley, Suite 200 Langhorne, Pennsylvania 19047 (215) 702-4000 (215) 702-4045 fax	TITLE: **EXCAVATION AREA OVERVIEW** **SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD** **INTERIM MEASURES WORK PLAN**

REVISION: A			
PROJECT: N62470-13-D-8007 LANT-RAC	PROJECT NO.: 106-4659	FIGURE:	**Figure 2-2**
LOCATION: NSA-CRANE, CRANE, INDIANA	DATE: 06/08/2016		



1 INCH = 4,000 FEET
(SCALE AT 11" X 17")
SCALE IN FEET
0 2,000 4,000
NAD 1983 STATEPLANE
INDIANA WEST FIPS 1302 FEET

DEFINITIONS:
DRMO = Defense Re-utilization & Marketing Office
PCB = polychlorinated biphenyl
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit

PREPARED FOR:
NAVFAC

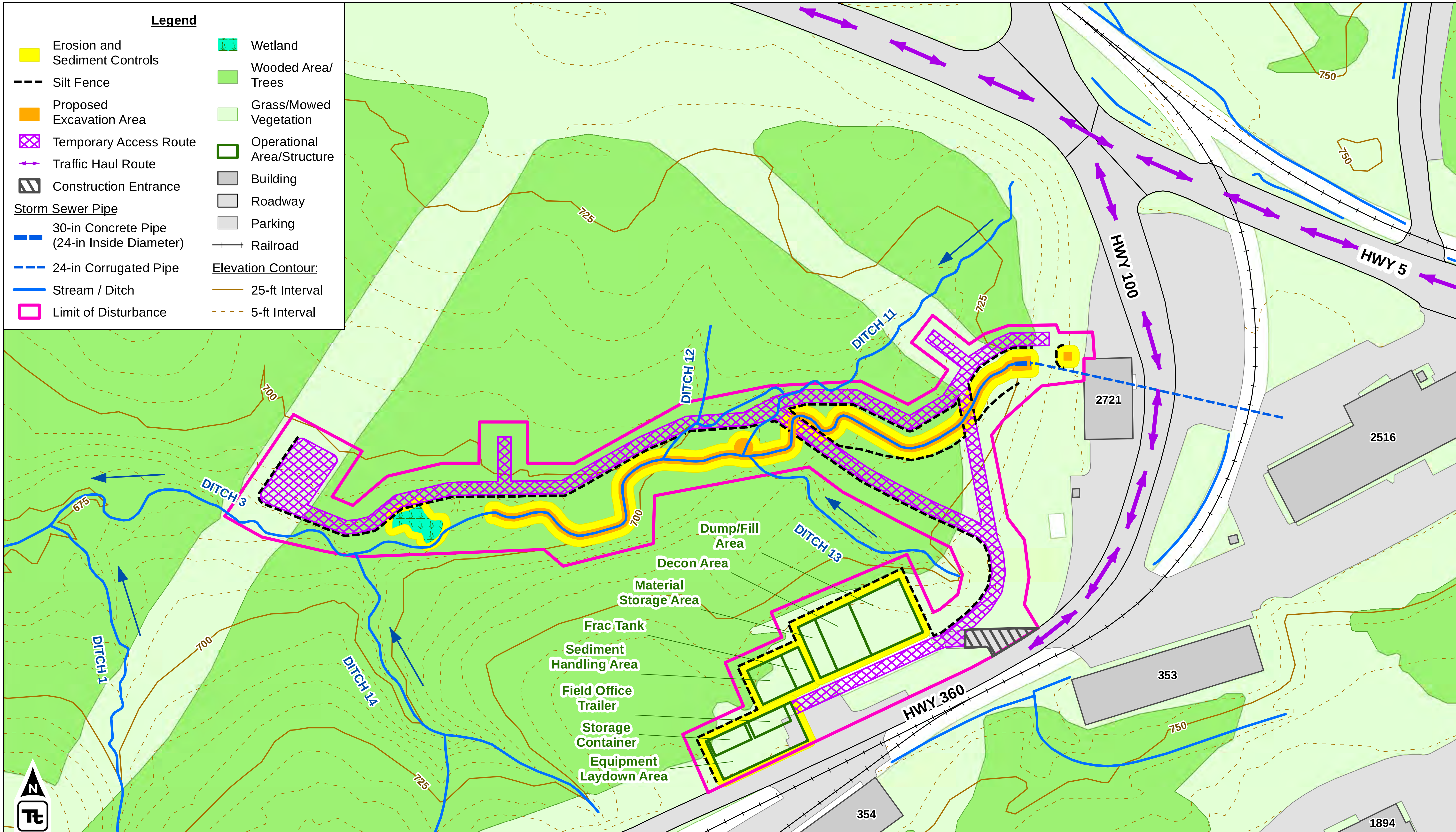
PREPARED BY:
TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE: **TRAFFIC MANAGEMENT PLAN: SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD INTERIM MEASURES WORK PLAN**

A
REVISION

PROJECT: N62470-13-D-8007 LANT-RAC
PROJECT NO.: 106-4659
FIGURE: **Figure 2-3**
LOCATION: NSA-CRANE, CRANE, INDIANA
DATE: 06/08/2016

(ltts153fs1) P:\NAVFAC - Naval Facilities Engineering Command\NSA-Crane Indiana\GIS\MXD\IMWP\Fig2-3_TrafficManagementPlan.mxd 2016/06/08 jeff.dahoda



1 INCH = 100 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 100 200

NAD 1983 STATEPLANE INDIANA WEST
FIPS 1302 FEET

NOTES:
1) Erosion and Sediment Control Plan: E&SCs will be implemented in accordance with the E&SC Plan and SWPPP. This figure illustrates areas where E&SC measures will be installed. Areas bordered in yellow may include: straw wattles, straw bales, erosion blankets, permanent/temporary seeding, pipe-around diversion and check-dam systems.
2) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek. Changes in the stream path noted in Tetra Tech field observations of 03/29/2016 have been implemented.

DEFINITIONS:
PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit

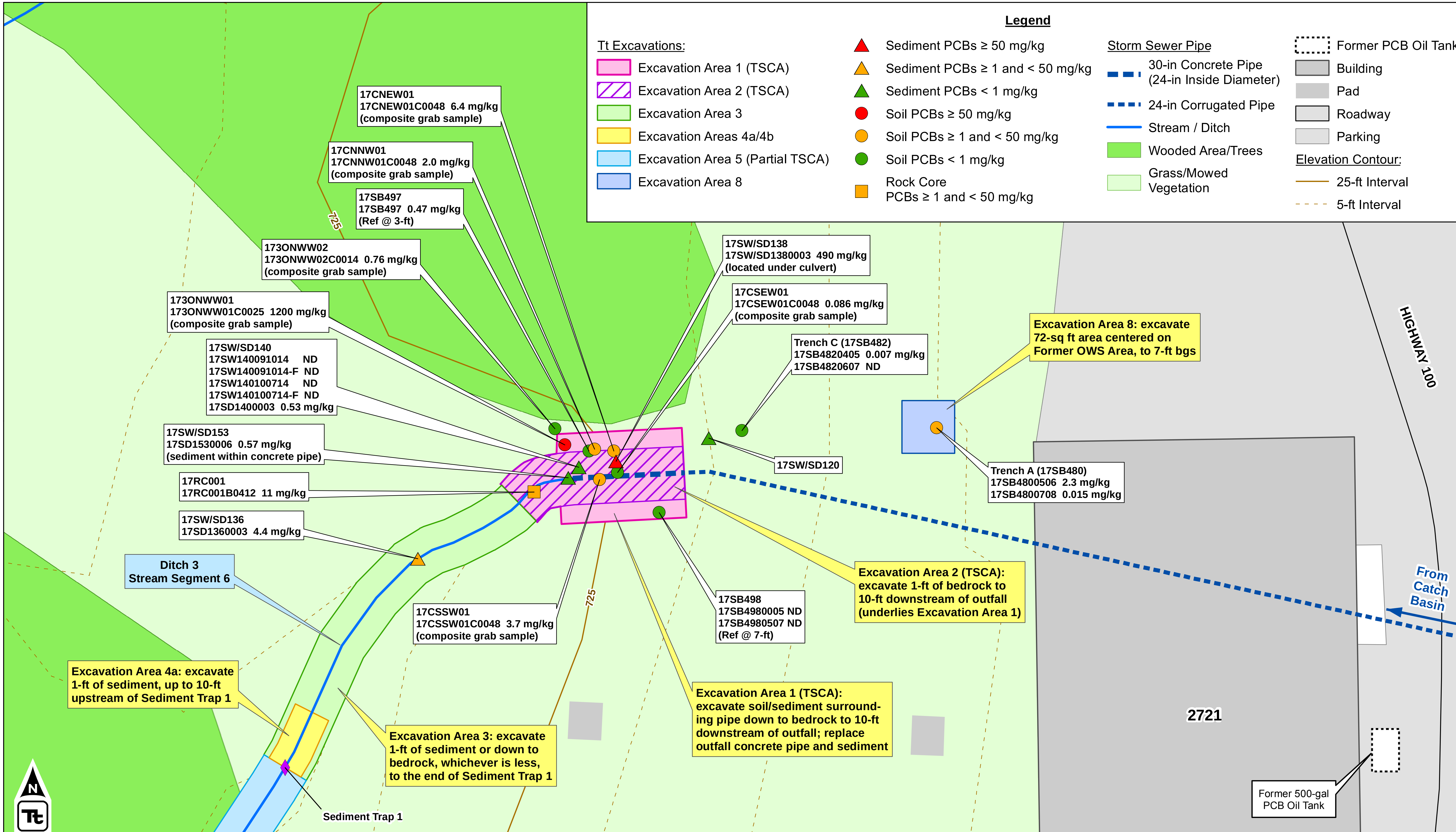
PREPARED FOR:
NAVFAC

PREPARED BY:
TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE:
EROSION AND SEDIMENT CONTROL PLAN
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

PROJECT:	PROJECT NO.:	FIGURE:
N62470-13-D-8007 LANT-RAC	106-4659	Figure 2-4
LOCATION: NSA-CRANE, CRANE, INDIANA	DATE: 06/08/2016	



1 INCH = 15 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 15 30

NAD 1983 STATEPLANE INDIANA WEST FIPS 1302 FEET

NOTES:
1) Soil, sediment and bedrock sampling locations and analytical results from: Draft Final Technical Memorandum for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity, Crane, Indiana TetraTech, January 13, 2016.
2) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek. No changes in this stream reach were noted in Tetra Tech field observations of 03/29/2016.

DEFINITIONS:
PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit
TSCA = Toxic Substances Control Act

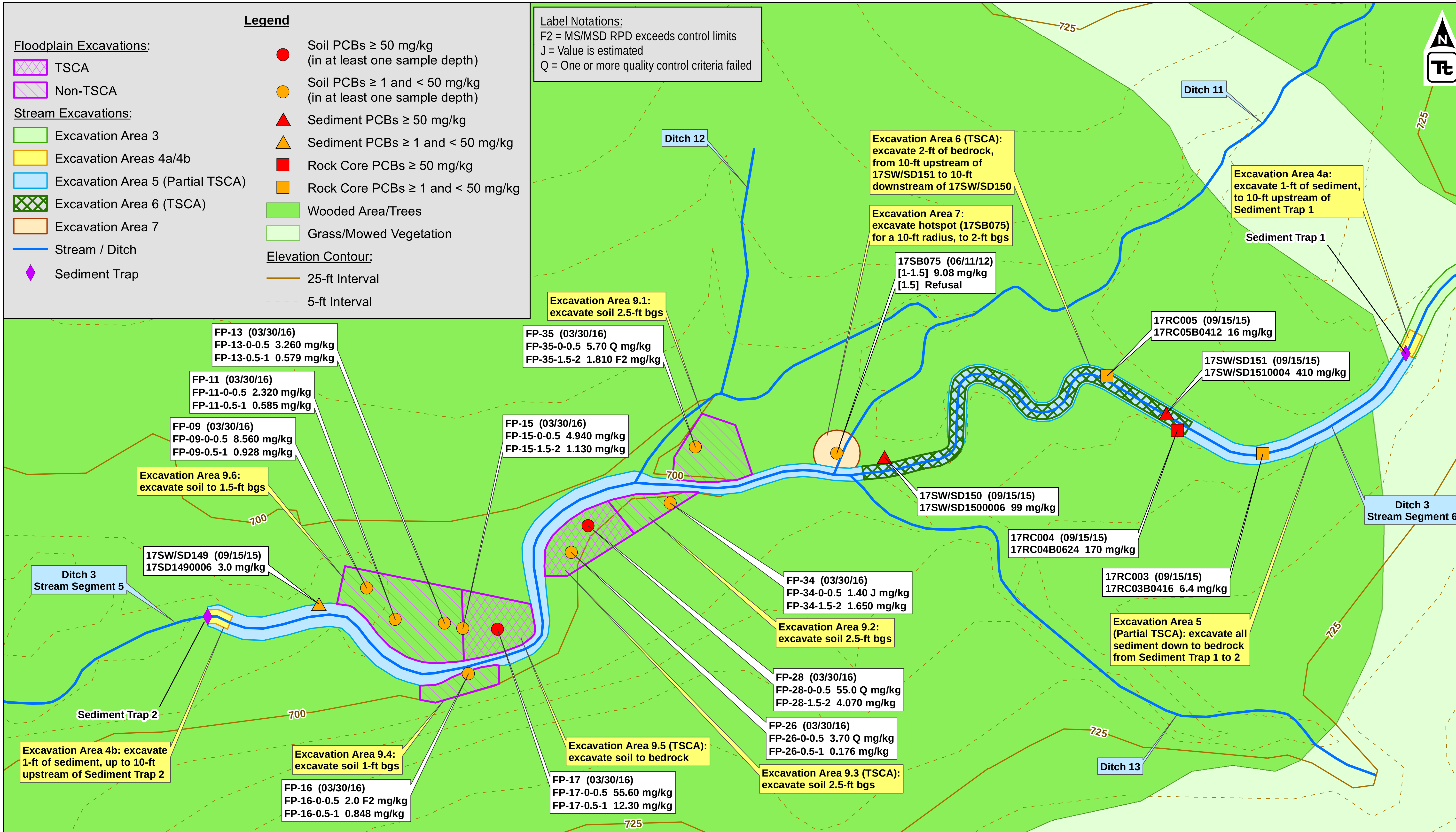
PREPARED FOR: NAVFAC

PREPARED BY: TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE: UPSTREAM EXCAVATION AREAS (1, 2, 3, 4A, 8)
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

PROJECT: N62470-13-D-8007 LANT-RAC
PROJECT NO.: 106-4659
LOCATION: NSA-CRANE, CRANE, INDIANA
DATE: 06/08/2016
FIGURE: Figure 2-5



1 INCH = 40 FEET (SCALE AT 17" X 11")

SCALE IN FEET

0 40 80

NAD 1983 STATEPLANE INDIANA WEST FIPS 1302 FEET

NOTES:
1) Previous soil, sediment and bedrock sampling locations and analytical results from: *Draft Final Technical Memorandum for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity, Crane, Indiana; TetraTech, January 13, 2016.* Recent samples collected 03/30/2016.
2) Ditches with numerical designations within SWMU 17/04 are unnamed tributaries of Boggs Creek. Changes in the stream path noted in Tetra Tech field observations of 03/29/2016 have been implemented.

DEFINITIONS:
PCB = polychlorinated biphenyl (CAS 1336-36-3)
NSA = Naval Support Activity
SWMU = Solid Waste Management Unit
TSCA = Toxic Substances Control Act

PREPARED FOR: NAVFAC

PREPARED BY: TETRA TECH EC, INC.
One Oxford Valley, Suite 200
Langhorne, Pennsylvania 19047
(215) 702-4000 (215) 702-4045 fax

TITLE: EXCAVATION AREAS 4A, 4B, 5, 6, 7, AND 9.1 TO 9.6
SWMU 17/04 - PCB CAPACITOR BURIAL/POLE YARD
INTERIM MEASURES WORK PLAN

REVISION: A

PROJECT: N62470-13-D-8007 LANT-RAC

PROJECT NO.: 106-4659

LOCATION: NSA-CRANE, CRANE, INDIANA

DATE: 06/08/2016

FIGURE: Figure 2-6

APPENDIX A

SCHEDULE

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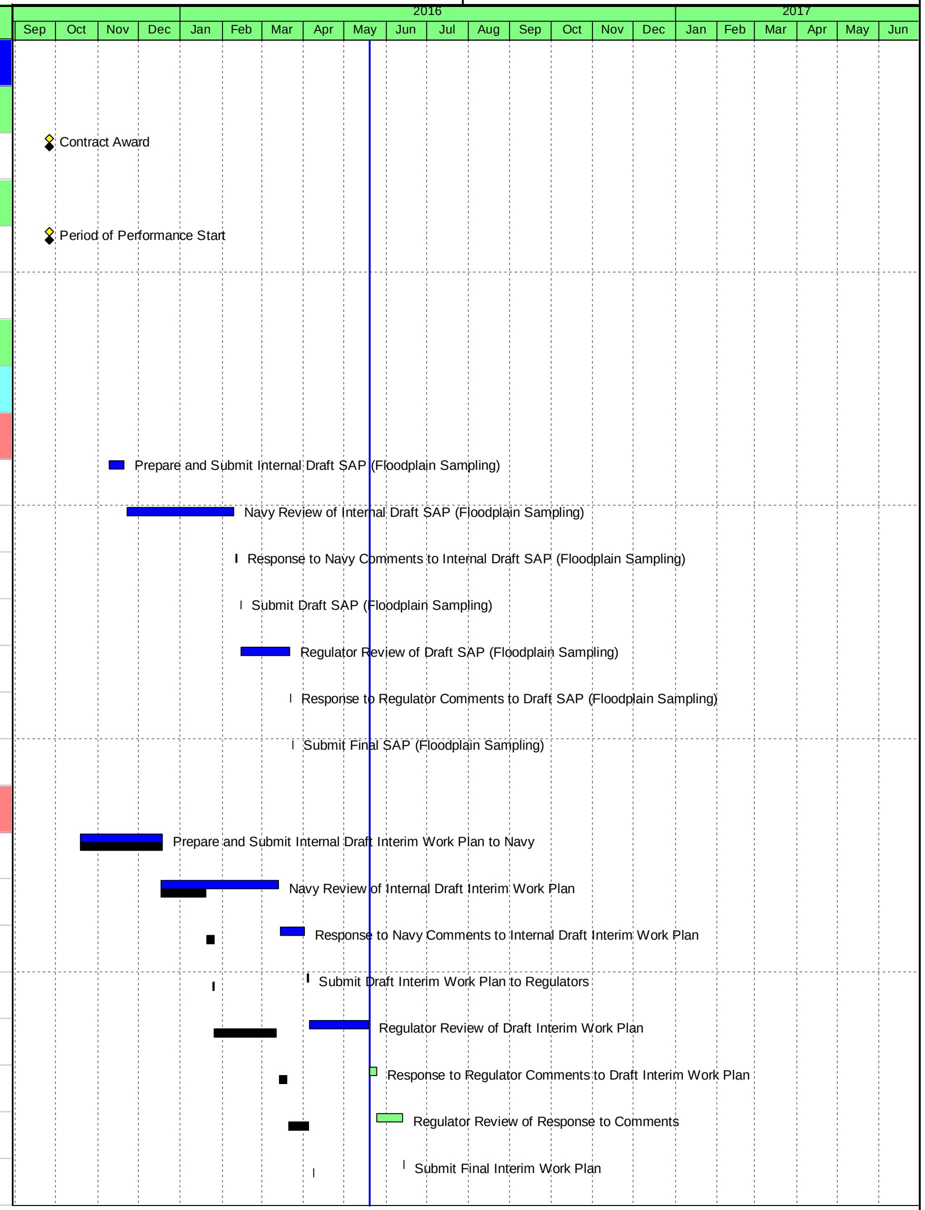
CTO WE38 PCB Capacitor Burial and Pole Yard, NAVSUPPACT Crane, IN

Data Date 20-May-16

Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
	CTO WE38 PCB Capacitor Burial and Pole Yard, NAVSUPPACT Crane, IN	711		26-Sep-15 A	04-Oct-17
	Contract Award	0		26-Sep-15 A	26-Sep-15 A
A1000	Contract Award	0	100%	26-Sep-15 A	
	Period of Performance	711		26-Sep-15 A	04-Oct-17
A1010	Period of Performance Start	0	100%	26-Sep-15 A	
A1020	Period of Performance End	0	0%		04-Oct-17
	Project Management	483		19-Oct-15 A	10-Mar-17
	Preconstruction Activities	229		19-Oct-15 A	14-Jun-16
	Sampling & Analysis Plan (SAP) - Floodplain Sampling	160		09-Nov-15 A	24-Mar-16 A
A1490	Prepare and Submit Internal Draft SAP (Floodplain Sampling)	10	100%	09-Nov-15 A	20-Nov-15 A
A1500	Navy Review of Internal Draft SAP (Floodplain Sampling)	30	100%	23-Nov-15 A	10-Feb-16 A
A1510	Response to Navy Comments to Internal Draft SAP (Floodplain Sampling)	3	100%	11-Feb-16 A	12-Feb-16 A
A1520	Submit Draft SAP (Floodplain Sampling)	1	100%	15-Feb-16 A	15-Feb-16 A
A1530	Regulator Review of Draft SAP (Floodplain Sampling)	30	100%	15-Feb-16 A	22-Mar-16 A
A1540	Response to Regulator Comments to Draft SAP (Floodplain Sampling)	1	100%	23-Mar-16 A	23-Mar-16 A
A1550	Submit Final SAP (Floodplain Sampling)	1	100%	24-Mar-16 A	24-Mar-16 A
	Interim Work Plan	229		19-Oct-15 A	14-Jun-16
A1070	Prepare and Submit Internal Draft Interim Work Plan to Navy	58	100%	19-Oct-15 A	18-Dec-15 A
A1080	Navy Review of Internal Draft Interim Work Plan	31	100%	18-Dec-15 A	14-Mar-16 A
A1090	Response to Navy Comments to Internal Draft Interim Work Plan	14	100%	15-Mar-16 A	01-Apr-16 A
A1100	Submit Draft Interim Work Plan to Regulators	1	100%	04-Apr-16 A	04-Apr-16 A
A1120	Regulator Review of Draft Interim Work Plan	45	100%	05-Apr-16 A	19-May-16 A
A1130	Response to Regulator Comments to Draft Interim Work Plan	5	0%	20-May-16 A	25-May-16
A1140	Regulator Review of Response to Comments	15	0%	25-May-16	13-Jun-16
A1150	Submit Final Interim Work Plan	1	0%	14-Jun-16	14-Jun-16



Primary Baseline | Remaining Work | Baseline Milestone
Actual Work | Critical Remaining Work | Milestone

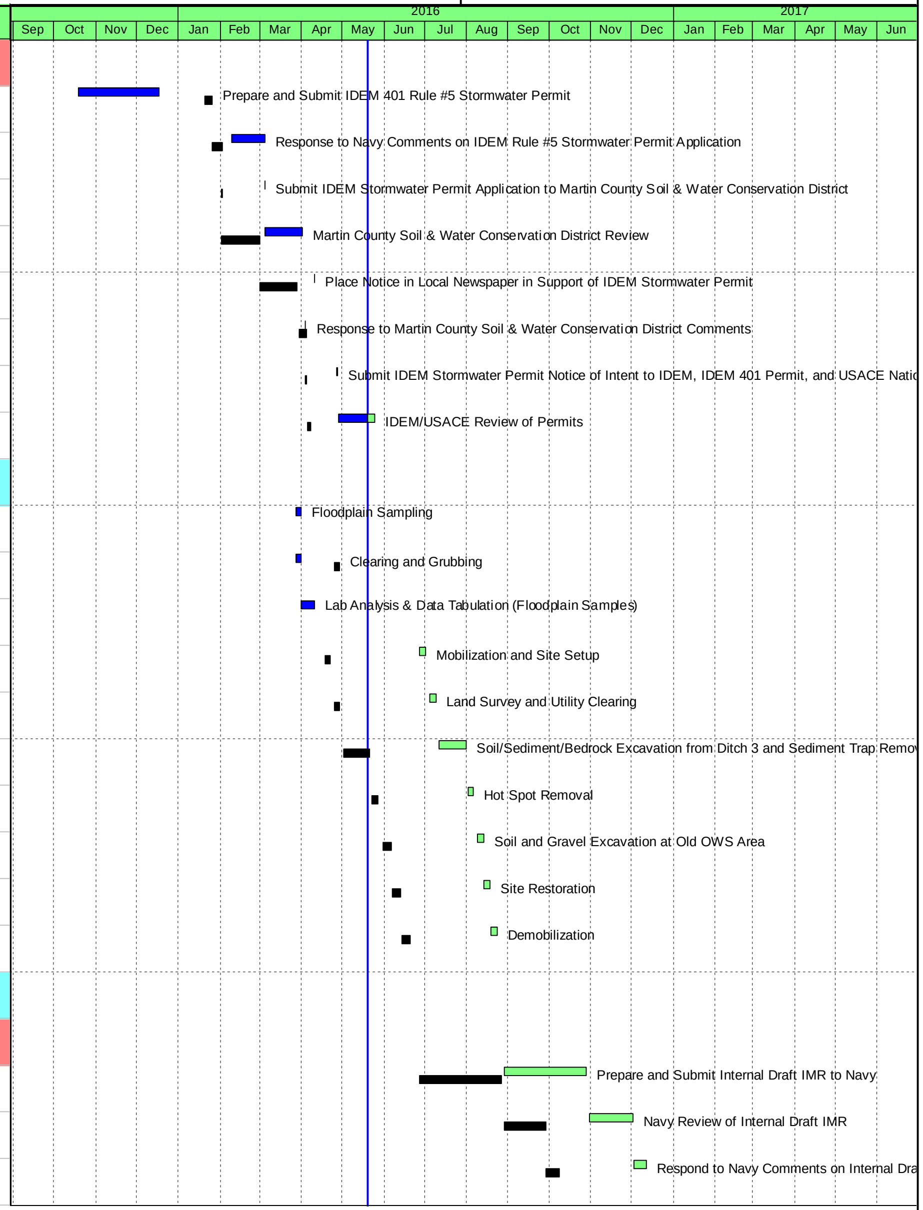
Attachment 2

TETRA TECH EC, INC.

CTO WE38 PCB Capacitor Burial and Pole Yard, NAVSUPPACT Crane, IN

Data Date 20-May-16

Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
Permitting		146		19-Oct-15 A	25-May-16
A1160	Prepare and Submit IDEM 401 Rule #5 Stormwater Permit	58	100%	19-Oct-15 A	18-Dec-15 A
A1170	Response to Navy Comments on IDEM Rule #5 Stormwater Permit Application	8	100%	10-Feb-16 A	05-Mar-16 A
A1180	Submit IDEM Stormwater Permit Application to Martin County Soil & Water Conservation District	1	100%	05-Mar-16 A	05-Mar-16 A
A1190	Martin County Soil & Water Conservation District Review	28	100%	05-Mar-16 A	01-Apr-16 A
A1200	Place Notice in Local Newspaper in Support of IDEM Stormwater Permit	1	100%	11-Apr-16 A	11-Apr-16 A
A1210	Response to Martin County Soil & Water Conservation District Comments	0	100%	04-Apr-16 A	04-Apr-16 A
A1220	Submit IDEM Stormwater Permit Notice of Intent to IDEM, IDEM 401 Permit, and USACE Nationwide Permit #38	1	100%	27-Apr-16 A	27-Apr-16 A
A1230	IDEM/USACE Review of Permits	28	78.57%	28-Apr-16 A	25-May-16
Fieldwork		116		28-Mar-16 A	23-Aug-16
A1250	Floodplain Sampling	5	100%	28-Mar-16 A	01-Apr-16 A
A1255	Clearing and Grubbing	5	100%	28-Mar-16 A	01-Apr-16 A
A1260	Lab Analysis & Data Tabulation (Floodplain Samples)	11	100%	01-Apr-16 A	11-Apr-16 A
A1270	Mobilization and Site Setup	5	0%	27-Jun-16	01-Jul-16
A1290	Land Survey and Utility Clearing	5	0%	05-Jul-16	09-Jul-16
A1300	Soil/Sediment/Bedrock Excavation from Ditch 3 and Sediment Trap Removal	20	0%	12-Jul-16	31-Jul-16
A1310	Hot Spot Removal	5	0%	02-Aug-16	06-Aug-16
A1330	Soil and Gravel Excavation at Old OWS Area	5	0%	09-Aug-16	13-Aug-16
A1340	Site Restoration	5	0%	14-Aug-16	18-Aug-16
A1350	Demobilization	5	0%	19-Aug-16	23-Aug-16
Post Construction Deliverables		182		29-Aug-16	10-Mar-17
Interim Measures Report (IMR)		182		29-Aug-16	10-Mar-17
A1410	Prepare and Submit Internal Draft IMR to Navy	60	0%	29-Aug-16	28-Oct-16
A1420	Navy Review of Internal Draft IMR	30	0%	31-Oct-16	02-Dec-16
A1430	Respond to Navy Comments on Internal Draft IMR	10	0%	03-Dec-16	12-Dec-16



Primary Baseline | Remaining Work | Baseline Milestone
Actual Work | Critical Remaining Work | Milestone

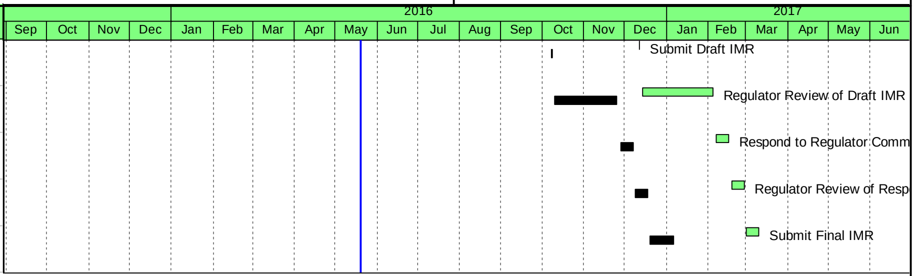
Attachment 2

TETRA TECH EC, INC.

CTO WE38 PCB Capacitor Burial and Pole Yard, NAVSUPPACT Crane, IN

Data Date 20-May-16

Activity ID	Activity Name	Original Duration	Activity % Complete	Start	Finish
A1440	Submit Draft IMR	1	0%	12-Dec-16	12-Dec-16
A1450	Regulator Review of Draft IMR	45	0%	14-Dec-16	04-Feb-17
A1460	Respond to Regulator Comments on Draft IMR	10	0%	07-Feb-17	16-Feb-17
A1470	Regulator Review of Response to Comments	10	0%	18-Feb-17	27-Feb-17
A1480	Submit Final IMR	10	0%	01-Mar-17	10-Mar-17



Primary Baseline | Remaining Work | Baseline Milestone
Actual Work | Critical Remaining Work | Milestone

Attachment 2

TETRA TECH EC, INC.

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APPENDIX B

WASTE MANAGEMENT PLAN

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC
REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62470-13-D-8007 CONTRACT TASK ORDER NO. WE38

FINAL
WASTE MANAGEMENT PLAN
SOLID WASTE MANAGEMENT UNIT 17/04
POLYCHLORINATED BIPHENYL CAPACITOR BURIAL/POLE YARD
NAVAL SUPPORT ACTIVITY (NSA) CRANE
CRANE, INDIANA

June 2016

Prepared for

Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Avenue
Norfolk, Virginia 23511

Prepared by

Tetra Tech EC, Inc.
5250 Challedon Drive
Virginia Beach VA 23462

Revision	Date	Prepared by	Approved by	Pages Affected
0	6/10/16	J. Peters	D. Kearns	All

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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

APP	Accident Prevention Plan
CFR	*Code of Federal Regulations*
COC	chemical of concern
COR	Contracting Officer's Representative
CTO	Contract Task Order
DOT	United States Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EPP	Environmental Protection Plan
EHS	Environmental, Health, and Safety
HAZWOPER	Hazardous Waste Operations and Emergency Response
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IM	interim measure
IMWP	Interim Measures Work Plan
Mg/kg	milligrams per kilogram
MIDLANT	Mid-Atlantic
NAVFAC	Naval Facilities Engineering Command
NSA	Naval Support Activity
PCB	polychlorinated biphenyl
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
SDS	Safety Data Sheet
SVOC	semi-volatile organic compound
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TtEC	Tetra Tech EC, Inc.
UHWM	Uniform Hazardous Waste Manifest
USEPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
WMP	Waste Management Plan

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1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) has prepared this Waste Management Plan (WMP) for performance of an Interim Measure (IM) at Solid Waste Management Unit (SWMU) 17/04- Polychlorinated Biphenyl (PCB) Capacitor Burial/Pole Yard at Naval Support Activity (NSA) Crane in Crane Indiana. This IM is being performed for the United States Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic (MIDLANT) under Remedial Action Contract, N62470-13-D-8007, Contract Task Order (CTO) WE38.

Site history and site information is included in Section 1.1 of the Interim Measures Work Plan (IMWP) as well as Section 1.1 of the Environmental Protection Plan (EPP).

1.1 Purpose and Scope

The purpose of this WMP is to present the waste management practices and procedures to be followed to manage all waste streams generated during performance of the field activities during the IM at SWMU 17/04. The chemical of concern (COC) at SWMU 17/04 being addressed during this IM is PCBs. PCBs are regulated for disposal under the Toxic Substances Control Act (TSCA). It is not anticipated that other COCs will be present; however waste characterization sampling will be determined as required in accordance with the Resource Conservation and Recovery Act (RCRA) for disposal purposes as described herein.

The IM activities at SWMU 17/04 will include excavation of PCB-contaminated soil, sediment, and bedrock (media) and associated debris. This media, when cleaned up and disposed of is considered to be bulk PCB remediation waste and as such, cleanup and disposal will be based on concentration of PCBs found. Some areas have media that is contaminated with PCBs at levels at or greater than 50 milligrams per kilogram (mg/kg) [TSCA regulated] and other locations are known or anticipated to be contaminated with PCBs at levels less than 50 mg/kg [non TSCA regulated]. Contaminated soil and debris must be appropriately handled and disposed off-site in accordance with federal and state regulations as described in this WMP.

This WMP identifies on-site waste management activities to be conducted such as waste characterization, waste accumulation and containerization, waste profiling, marking, and labeling of waste containers, as well as manifesting and off-site transport and disposal of PCB-contaminated media and associated wastes.

Another goal of this plan is to ensure that waste minimization practices are followed, to the extent practicable, to reduce the volume of waste that will be generated, stored, and removed from the site for disposal, including proper use and management of hazardous materials.

1.2 Regulatory References

Project waste-related activities must comply with all applicable federal and state laws and regulations, including permits described further in the EPP and within sections of this WMP.

1.2.1 Solid and Hazardous Waste Regulation

Regulations for hazardous waste are issued under authority of RCRA of 1976. Regulations for solid wastes are issued under the Solid Waste Disposal Act of 1965. Regulations that govern PCB cleanup and disposal are issued under authority of TSCA of 1976.

Federal regulations allow states to administer and enforce environmental laws as long as they are equal to, or stricter than, federal regulations. In Indiana, the Indiana Department of Environmental Management (IDEM) has been authorized by the United States Environmental Protection Agency (USEPA) to implement the majority of the federal RCRA Subtitle C hazardous waste management program in Indiana. Indiana's hazardous waste management rules are codified at 329 Indiana Administrative Code (IAC) 3.1. Indiana has adopted most of the federal hazardous waste management standards codified federally at 40 Code of Federal Regulations (CFR) Parts 260-270, and 273. Exceptions and additions to the federal rules are specifically noted in the state's hazardous waste management rules. Regulations for disposal of PCBs in the state of Indiana are referred to the TSCA regulations codified in 40 CFR 761, in particular, 40 CFR 761.61 (PCB remediation waste) and the Indiana Administrative Code 329 IAC 4.1. TtEC will also prepare and provide completed waste profiles and manifests for Navy signature.

Media containing PCBs at concentrations at or greater than 50 mg/kg will be disposed in a RCRA Subtitle C chemical waste landfill or TSCA landfill while media containing PCBs at concentrations less than 50 mg/kg will be disposed at a Subtitle D solid waste landfill or municipal solid waste landfill that is permitted to receive PCBs. Regulations for PCBs at concentrations of 50 mg/kg or greater are considered to be TSCA regulated. The two levels of PCB concentration will be used to delineate waste disposal requirements, at the concentration of PCBs found.

1.2.2 Generator Identification Number

The Generator for the waste generated during the IM is US Navy NSA Crane Div located at 300 SR 361, Crane, Indiana 47522. The Generator USEPA identification number for SWMU 17/04 is IN5170023498. This number will be used for inclusion on waste profile sheets and on uniform hazardous waste manifests (UHWM) during the waste designation and transportation/disposal process unless otherwise specified by the Generator. TtEC will oversee the preparation of the completed waste profiles and manifests for Navy signature. TtEC will verify this information and will obtain Generator contact information for inclusion on profile sheets and UHWM.

2.0 QUALIFICATIONS AND TRAINING

2.1 Specific Training Requirements

2.1.1 Waste Management Awareness Training

Personnel working on this project, including subcontractors involved in handling contaminated waste, will be briefed on the requirements of this WMP during site orientation. Training will be by designated TtEC Project Environmental Manager as described in the EPP.

2.1.2 Department of Transportation Hazardous Material Employee Training

TtEC or subcontractor employees who perform (and supervisors who oversee employees who perform) transporting of hazardous materials or preparing hazardous materials for transportation will be trained, tested, and certified in accordance with 49 CFR 172, Subpart H, including security awareness. Training is required for persons who perform tasks such as selecting U.S. Department of Transportation (DOT) packaging, placing DOT markings and labels on packages, or preparing shipping papers for DOT regulated material/including waste. This training is required initially and then every 3 years thereafter.

This training is required for employees and supervisors because at least a portion of waste generated on this project, when transported in bulk loads on state highways, is expected to meet or exceed the reportable quantity (RQ) of one pound PCBs or be TSCA regulated. PCBs, when present in an RQ amount or that are TSCA regulated, are a class 9 DOT-regulated hazardous substance/hazardous material. The determination of RQ and whether PCBs are present above the RQ is discussed in Section 7.1 of this WMP.

2.1.3 Hazardous Waste Operations and Emergency Response Training

All site workers who work within an exclusion zone and may either be exposed to chemical related hazards are required will be trained in accordance with 29 CFR 1910.120/1926.65 – Hazardous Waste Operations and Emergency Response (HAZWOPER). This training is specified in further detail within the Accident Prevention Plan (APP/Site Safety and Health Plan (SSHP [APP/SSHP].

2.2 Certification

TtEC and/or subcontractors transporting (or offering) hazardous materials, including hazardous substances, will possess a current certificate of registration issued by the Research and Special Programs Administration, DOT, as per 49 CFR 107, Subpart G. TtEC has this certificate of registration.

3.0 POLLUTION PREVENTION AND WASTE MINIMIZATION

To minimize the volume of all waste streams generated during the project, the following general guidelines will be followed.

- TtEC will plan for waste management prior to beginning work tasks and carefully evaluate work processes employed to identify opportunity for waste minimization.
- Waste materials will not be contaminated unnecessarily.
- Waste material will not be commingled with other wastes (e.g., wastes from one excavation or area with another excavation or area) without ensuring compatibility with the disposal process and characterization prior to their addition (e.g., soil, sediment, and bedrock with PCBs equal to or greater than 50 mg/kg will not be comingled with soil, sediment, and

bedrock with PCBs less than 50 mg/kg.)

- Decontamination and extra sampling supplies will be maintained outside any potentially contaminated area to keep the supplies clean and minimize additional waste generation.
- Mixing of detergents or decontamination solutions will be performed outside potentially contaminated areas.
- Decontamination will be performed before contaminated material or equipment is moved from one site to another or from the contaminated work zone to a clean area to prevent spread of contamination.
- Drop cloths or absorbent material will be used to contain small spills or leaks immediately upon discovery and will be promptly cleaned up.
- Trucks transporting contaminated media will be inspected prior to movement to ensure no loose soil is present on outside of vehicle. All trucks will be lined and tarped prior to movement of soil.
- Contaminated material will not be placed with clean material.
- Spill prevention requirements and storm water pollution prevention requirements described in the EPP will be implemented.
- Material and equipment will be decontaminated and reused when practicable unless the use of disposable material (e.g., sampling equipment) will result in less waste volume generated.
- Less hazardous substances will be used whenever possible (only the volume of standard solutions needed for testing will be brought onto the site); minimal (but sufficient) amounts of decontamination water and solvent rinses will be used.
- Personnel will be trained sufficient such that personnel know the basic requirements for management of waste streams prior to starting work tasks and with whom to coordinate for waste management questions.

4.0 HAZARDOUS MATERIAL CONTROL

No hazardous materials will be brought onto the site that do not directly relate to requirements for the performance of the contract.

The Contractor Hazardous Material Inventory Log contained in Appendix F of the APP will be used to track quantities of each hazardous material to be used on this project by TtEC and its subcontractors. Copies of the safety data sheets (SDSs) associated with Appendix F in the APP will be maintained with this log. TtEC will provide the Navy Corrective Action/Site Manager and Navy Contracting Officer’s Representative (COR) the inventory log and SDS during mobilization and upon request. Copies of the Inventory Log and SDS will be maintained in the field office trailer by the Site Safety and Health Officer (SSHO).

Additional information and best management practices for management of hazardous materials are contained in the APP and the EPP.

5.0 WASTE STREAMS AND CHARACTERIZATION

This IM is being performed to address PCBs and waste that is anticipated to be non- hazardous under RCRA based upon available site information and prior sampling and analysis; however a portion of the waste is regulated under TSCA (PCBs at or greater than 50 mg/kg).

In the unlikely event that sample results for the media generated during the IM indicate that waste is a RCRA hazardous waste (waste that is ignitable, corrosive, reactive, or toxic under 40 CFR 261 Subpart C based on representative sampling and analysis [listed waste is not anticipated]), this WMP will be appended to address management of RCRA hazardous waste based upon analytical sampling results.

5.1 Wastes to Be Disposed Off-Site

TtEC anticipates the following waste materials will be generated and will be transported off-site for disposal and/or recycling as appropriate.

5.1.1 PCB-Contaminated Media and Debris

- Media (soil, sediment, bedrock, gravel) and associated debris (e.g., contaminated pipe) with PCB concentration at or greater than 50 mg/kg will be disposed as TSCA regulated waste at a RCRA subtitle C chemical waste landfill or TSCA landfill.
- Media and debris with PCB concentration less than 50 mg/kg will be disposed as non-TSCA regulated waste at a RCRA subtitle D landfill or municipal solid waste landfill that accepts PCBs. Notification to the landfill is required 15-days prior to sending the waste to the facility as per Section 7.5.1.
- Media sampling for RCRA characterization will be determined, in part, based on landfill analytical requirements and generator knowledge regarding the contaminants that are known to be or suspected to be present within the media. It is anticipated that the media will be non-hazardous under RCRA.
- If an amending agent is used to solidify soil and sediment, the agent added will be included on the profile for the contaminated media.
- Contaminated solid media and debris will be transported in bulk containers (rolloffs or dump trucks, with liners and covers).

5.1.2 Investigation/Remediation Derived Waste

Investigation/remediation derived waste includes such items as used disposable personal protective equipment (PPE), used disposable sampling equipment, used disposable decontamination wipes, used stockpile liner material, etc. (debris) that has had contact with PCB-contaminated media. This category also includes decontamination water (water and agent used for non-TSCA decontamination of personnel and equipment).

PPE, used disposable sampling equipment, and debris generated during TSCA regulated media generation and handling tasks will be bagged and labeled and disposed with the soil/sediment/bedrock media waste stream depending on whether the media PCB concentration is TSCA regulated or non-TSCA regulated. If there is doubt, the debris will be disposed as TSCA regulated waste.

The waste profile for soil/sediment media will include debris and must be found acceptable in advance in order for this investigation/remediation derived waste debris to be co-mingled. If not acceptable to the receiving facility, this waste will be accumulated and profiled separately from the media waste stream and placed into 55-gallon drums or bulk container (e.g., rolloff or supersack) as appropriate.

A waste profile for decontamination water will be developed. Decontamination water may be suitable for disposal with the liquid media described in Section 5.1.5 below (liquid from dewatering/solidification pad); however this must be determined with the disposal facility in advance. If it is suitable for disposal with the liquid media in section 5.1.5 below, the profile will include both processes and information on any added decontamination agent used (detergents or other chemicals). If not suitable for disposal with the liquid media in section 5.1.5 below, a separate profile sheet will be developed. The decontamination water will be accumulated in 55-gallon drums unless approved for addition to the bulk frac tank.

5.1.3 TSCA Decontamination Media Waste

When TSCA regulated media handling is complete, movable equipment that has been in contact with this media will be decontaminated as required by TSCA prior to being removed from the TSCA regulated area. This waste stream consists of used diesel (solvent) and sorbent rags generated during the TSCA regulated self-implementing decontamination process for mobile equipment (40 CFR 761.79(c) – [e.g., excavator or loader bucket]) as described in Section 9.12.3.5 the APP.

Small volumes (less than 1 quart) of diesel and associated rags may be disposed with the TSCA regulated media (mixed in) as long as the 1) soil is capable of fully absorbing the product and 2) the receiving facility approves this as part of the waste stream on the profile sheet.

If not approved for disposal as part of the TSCA regulated media profile, the rags must be wrung out of free liquids and disposed of separately from the diesel and disposal based on the concentrations of PCBs in each waste stream (requires sampling for PCBs to ascertain concentration). If separate from the media profile, this waste will be contained in metal drums, or other appropriate container (used sorbent pads/rags accumulated separately from the used contaminated solvent).

5.1.4 Vegetation

Vegetation cut at or above 1-foot of the ground surface can be recycled or disposed as non-hazardous waste off-site (considered uncontaminated). Stumps and vegetation up to 1-foot of the ground surface will be disposed off-site at the concentration of PCBs in the adhering media (soil or sediment) as follows.

- Stumps with adhering soil or sediment with a PCB concentration at or greater than 50 mg/kg will be disposed as TSCA regulated waste at a RCRA subtitle C chemical waste landfill or TSCA landfill.
- Stumps with adhering soil or sediment with a PCB concentration less than 50 mg/kg will be disposed as non-TSCA regulated waste at a RCRA subtitle D landfill or municipal solid waste landfill
- Media sampling for RCRA characterization will also be considered for disposal purposes. It is anticipated that the media will be non-hazardous under RCRA.

5.1.5 Dewatering Liquids

Liquid media from dewatering of wet soil or sediment at the sediment/soil management pad is anticipated to be generated. This water will be pumped from the pad into an on-site frac tank. A filter sock will be attached to the hosing intake to prevent uptake of suspended fines within the liquid.

It is anticipated that the liquid media will be non-hazardous under RCRA and will be non-TSCA regulated because with sediments removed, water does not tend to bind PCBs in suspension. Sampling for disposal will be performed.

Liquid media will be transported in bulk vacuum truck to the intended off-site disposal facility based on sample results. Additional sampling may be required by the off-site disposal facility. Any sediments remaining in the bottom of the frac tank will be removed when the liquids have been removed and will be disposed at the concentration of PCBs found (with other TSCA- or non-TSCA sediments/soil as appropriate).

5.1.6 Clean Construction Debris

Clean construction debris will consist of miscellaneous wood, dunnage, cardboard, etc. that has not been in contact with any contaminated site media. This waste will be disposed in the TtEC on-site dumpster or a rolloff container that is sent for disposal at a municipal solid waste landfill or recycler as appropriate. No site contaminants will be comingled with this waste stream.

5.1.7 General Trash

This waste stream consists of office and lunch room waste from the field office and craft trailer. This waste will be disposed in an on-site dumpster. No site contaminants will be comingled with this waste stream.

5.1.8 Sanitary Waste

This waste stream consists of portable toilet and hand washing facility waste. All sanitary waste will be disposed off-site via the vendor providing service on a weekly basis (or more frequently if required).

5.2 General Requirements

Project wastes are anticipated to be characterized as non-hazardous waste (non-RCRA); however, all waste must be properly characterized, at the point of generation, in a representative manner to make this determination in addition to determining if the media and associated waste is TSCA regulated (PCBs at or above 50 mg/kg).

The anticipated waste disposal sampling requirements for the media are described in Section 5.3. The intended waste disposal facility will also be contacted to determine the required analytical and sampling requirements for each waste stream to be profiled, as they may be more stringent than identified below.

5.3 Waste Characterization Sample Requirements

For media (soil, sediment, bedrock, and media present in stumps) representative composite samples of the waste will be obtained and analyzed at an off-site laboratory. TtEC assumes the disposal facilities will require toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP metals, TCLP pesticides/herbicides, pH, ignitability, and cyanide and sulfide reactivity. For the liquid media (water in frac tank), the same suite of analytical samples above is assumed to be required (without TCLP) plus at least one grab sample of the water column to be analyzed for PCBs.

It is anticipated that pre-removal characterization samples (based on Tetra Tech NUS spring/summer 2015 delineation sampling) will be used to determine PCB concentration in an excavation area (soil, sediment, and bedrock) prior to excavation being performed when possible. If the concentrations were found during 2015 sampling at or above 50 mg/kg PCB, the media removed will be managed as TSCA waste. If below 50 mg/kg, the media removed will be managed as non-TSCA waste. If PCB samples are required for media characterization during the excavation and removal process, the samples will be discrete samples of the media (not composite samples).

The disposal facility will be contacted in advance to determine if there are additional sampling and analytical requirements (e.g., number of samples per cubic yard of material, additional sampling methods, etc.). The Project Chemist, Lisa Bienkowski and the Program Environmental Manager, Jennifer Peters, will assist the designated Project (or On-site) Environmental Manager (anticipated to be the Project Quality Control Manager unless otherwise designated) in making sampling and analytical decisions with regard to waste characterization and interpretation of sample results as necessary.

All official waste characterization and disposition instruction will be by the Generator's designated representative (NSA Crane). All profiles will be certified by the Generator by signature.

5.4 Unanticipated Waste Discovery

If suspected hazardous waste or other buried waste is found during the IM that was not identified in the contract documents (e.g., buried containers with content, transformers, capacitors, etc.), TtEC will immediately notify the Contracting Officer. TtEC will not disturb this material further until authorized by the Contracting Officer and relevant project plans, including this WMP and the APP, have been updated and approved to address proper handling of the material in accordance with the change management procedures in the Project Quality Control Plan.

6.0 WASTE ACCUMULATION AREAS

6.1 TSCA Remediation Waste Accumulation

- Bulk PCB remediation (40 CFR 761.65) waste may be stored at the clean-up site or site of generation for 180 days subject to the following conditions which will be met at the location of the sediment/soil handling pad or other temporary on-site stockpile areas if approved by the Navy.
  - The waste is placed in a pile designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting.
  - The waste must not generate leachate through decomposition or other reactions.
  - The storage site must have:
    - A liner that is designed, constructed, and installed to prevent any migration of wastes off or through the liner into the adjacent subsurface soil, groundwater or surface water at any time during the active life (including the closure period) of the storage site. The liner may be constructed of materials that may allow waste to migrate into the liner. The liner must be:
      - Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation.
      - Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift.
      - Installed to cover all surrounding earth likely to be in contact with the waste.
    - A cover that meets the requirements of paragraph (c)(9)(iii)(A) of 40 CFR 761.65 is installed to cover all of the stored waste likely to be contacted with precipitation, and is secured so as not to be functionally disabled by winds expected under normal seasonal meteorological conditions at the storage site. Poly-sheeting will be placed over any temporarily stockpiled soil that is to remain in place overnight or when inclement weather (rain, snow, wind, etc.) is apparent or forecast. The sheeting will be systematically placed so that ample overlap of sheeting is attained for the soil contained in the stockpile. Each sheeting interval will be secured with construction grade sandbags along the perimeter and within the center portions.

  - > A run-on control system designed, constructed, operated, and maintained such that:
    - It prevents flow onto the stored waste during peak discharge from at least a 25-year storm.
    - It collects and controls at least the water volume resulting from a 24-hour, 25-year storm. Collection and holding facilities (e.g., tanks or basins) must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.
- Inspections for PCB Bulk Remediation Waste storage areas such as the sediment/soil management pad will be performed initially to ensure the pad is designed as specified in the IMWP and inspected on a daily basis (daily logbook inspections) to ensure the storage area has proper containment, including liners (top and bottom) that are intact (top liner to be installed when area is not actively being worked), and that leachate is being properly contained and removed as specified in the IMWP.
- TSCA regulated waste storage areas (e.g., sediment/soil management pad) will have a PCB M_L Mark (yellow square PCB label per 40 CFR 761.45(a)) applied on signage marking the entrance and perimeter of the area when TSCA regulated wastes are present.

6.2 Containers Used For Waste Accumulation

TtEC will only use bulk and non-bulk containers that are in good condition and compatible with the waste placed within and as required by 49 CFR (when subject to 49 CFR as a hazardous material or hazardous substance). Bulk containers for solid waste materials will have a liner and media such as oil and sediment will be a solid (capable of passing the paint filter test) prior to shipment off-site. Liquid waste in containers will have sufficient freeboard to allow outage for expansion. TtEC will ensure containers are closed or properly covered, except when adding or removing waste and are properly secured to prevent tampering or unauthorized access. TtEC will be responsible for inspecting containers for signs of deterioration and will be responsible for responding to spills or leaks. All bulk loads of contaminated solid wastes leaving the site will be lined and tarped.

7.0 TRANSPORTATION AND WASTE DISPOSAL REQUIREMENTS

Elements of off-site transportation and waste disposal include disposal facility selection, waste loading and transportation, related to the loading and the off-site transportation and disposal of project waste, including recordkeeping. The following subsections present transportation and disposal requirements for project wastes that will be transported from the site.

7.1 Determination of Reportable Quantity and Hazardous Substance

The definition of a hazardous substance under DOT (Appendix A to 49 CFR 172.101) is as follows:

A material listed in Appendix A is regulated as a hazardous material and a hazardous substance under this subchapter if it is in a quantity in one package, which equals or exceeds the reportable quantity listed in Appendix A.

The RQ for PCBs in Appendix A is 1 pound. If an RQ of PCBs applies to a shipment of waste in any one container (drum, dump truck load, rolloff container, tank, etc.), the shipment must have an RQ listed in association with the Shipping Description.

To determine this, the concentration of PCBs in the media must be used. The following calculation will determine if the concentration of PCBs in the media will result in an RQ in any particular shipment.

Weight of shipment in pounds x percent of PCBs in media (of mass). For instance:

- A rolloff container of soil weighs 10,000 pounds. The soil contains 147 mg/kg PCBs (0.0147% by mass) = 1.47 pounds of PCBs. This container requires an RQ and the waste is a hazardous substance.
- A container of sediment weighs 10,000 pounds. The soil contains 35 mg/kg PCBs (0.035% by mass) = 0.35 pounds of PCBs. This container does not require RQ and the waste is not a hazardous substance.

For each waste stream it should be possible to determine in advance if a container/load requires an RQ and will be classified as a hazardous substance per DOT regulations.

7.2 Determination of Proper Shipping Name

The proper shipping description for non-TSCA regulated PCB remediation waste that is defined as a hazardous substance (has an RQ) (soil, sediment, bedrock, stumps) (as long as the waste is not also regulated under RCRA) is anticipated to be the following:

"UN3077, Environmentally Hazardous Substances, solid n.o.s. (polychlorinated biphenyls, soil mixture), 9, PGIII" RQ = 1 pound

The proper shipping description for non-TSCA regulated PCB remediation waste liquids (water from sediment/soil management pad) that is defined as a hazardous substance (has an RQ) (as long as the waste is not also regulated under RCRA) is anticipated to be the following:

"UN3082, Environmentally Hazardous Substances, liquid n.o.s. (polychlorinated biphenyls, water mixture), 9, PGIII" RQ = 1 pound

The proper shipping description for TSCA regulated PCB remediation waste (to be listed on the UHWM (soil, sediment, bedrock, stumps) (as long as the waste is not also regulated under RCRA) is anticipated to be the following:

"UN3432, Polychlorinated biphenyls, solid mixture, 9, PGII" RQ = 1 pound (*RQ applies if the soil contains 1 pound or more PCBs as per above formula*)

If non-TSCA regulated PCB remediation waste does not have an RQ, the non-hazardous waste manifest will state “Material not regulated for transportation.”

In the unlikely event a PCB remediation waste is determined to be regulated under RCRA as a hazardous waste based on waste characterization sample data, the shipping name must be properly evaluated and cannot be determined at this time.

7.3 Waste Profile Sheets

Waste profile sheets will be prepared for contaminated waste streams (TSCA and non- TSCA). Multiple profiles will be needed, depending on the classification of the waste streams and the manner or location of disposition. Profile sheets must be representative of the whole waste stream that will be disposed under that profile. Profile sheets will be prepared by the designated Project Environmental Manager and signed by the Generator’s Representative before they are sent to the disposal facility for approval.

Profiles will be prepared specific to the particular disposal facility and will contain process information, characterization decisions, including proper shipping description, waste composition, and analytical data and/or Generator knowledge that is representative of that particular waste stream.

TtEC will use 49 CFR 172, Section 101, to identify proper shipping names for each waste to be shipped off site (Section 7.2). Proper shipping names will be submitted to the Corrective Action/Site Manager in the form of draft shipping documents (profile and manifest) for review and approval.

Profiles and supporting analytical data will be forwarded to the Generator’s Representative (via the Corrective Action/Site Manager or COR) for review and signature a minimum of 5 days prior to shipment off-site. Once the profile is Generator- approved (a minimum of 5 days prior to shipment is required to allow the disposal facility time to review and issue a permit), the profile will be sent to the disposal facility for approval. Upon approval of the profile by the disposal facility, the facility (approval is required prior to shipment of the waste) will issue a profile number or “permit” and will authorize shipment of the waste to the facility. A copy of the signed profile, permit number, and analytical data will be maintained in the project files.

7.4 Hazardous Material Security Plan

It is not anticipated that a Hazardous Material Security Plan will be required for this project in accordance with 49 CFR 172 Subpart I. At the present time, the waste that may be offered into transportation for disposal is expected to be a DOT hazard class 9 (miscellaneous material) and security planning is not required for class 9 hazardous materials. Should other hazard classes of waste be generated, the security plan requirements will be reviewed to determine if a security plan is required.

7.5 Disposal Facility and transporter selection

The following requirements pertain to selection of a disposal facility and transporter for project wastes that are TSCA regulated and non-TSCA regulated.

TtEC will provide the COR with USEPA Identification Numbers (for TSCA- or RCRA- regulated waste), names, locations, and telephone numbers of treatment, storage, and disposal facilities and transporters to be used.

Prior to using a disposal facility or transporter for contaminated waste disposal, TtEC reviews the transporter and disposal facility under Environmental, Health, and Safety (EHS) Procedure 1-4, Subcontractor Selection and Management, to determine regulatory and permit compliance and operational status. Whenever possible the transporters of hazardous waste and the disposal facility should also be approved and listed on the Defense Reutilization and Marketing Service web page.

For TSCA regulated waste transportation, the transporter must have an USEPA Identification Number and must have filed a Notification of PCB Waste Activity (USEPA Form 7710-53) with USEPA. In addition, the transportation subcontractor will have all appropriate licenses, permits, and registrations such as DOT registration, and DOT Hazardous Material Registration as well as proof of liability insurance coverage.

7.5.1 Non-hazardous and Non-TSCA Contaminated Waste Disposal

TtEC will dispose of all non-hazardous contaminated waste at permitted RCRA Subtitle D landfill or licensed municipal solid waste landfill. The landfill must be permitted to accept PCBs at concentrations up to those being sent for disposal (up to 49 mg/kg). Off- site disposal facilities with significant violations or compliance problems (such as facilities known to be releasing hazardous constituents into groundwater, surface water, soil, or air) will not be used.

The Generator must provide written notice, including the quantity to be shipped and the highest concentration of PCBs at least 15 days before the first shipment of bulk PCB remediation waste from each cleanup site by the Generator, to each off-site facility where the waste is destined for an area not subject to TSCA PCB Disposal Approval.

7.5.2 TSCA Regulated Waste Disposal

For TSCA regulated waste, TtEC will use RCRA Subtitle C-permitted (chemical waste landfill) facilities or TSCA-permitted landfill facilities with a valid USEPA Identification Number. Chemical waste landfills will meet the requirements of 40 CFR 761.75. Off- site disposal facilities with significant RCRA or TSCA violations or compliance problems (such as facilities known to be releasing hazardous constituents into groundwater, surface water, soil, or air) will not be used.

7.6 Packaging

TtEC will provide bulk and nonbulk containers for packaging of DOT hazardous materials/waste or hazardous substances consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Section 101, Column 8. Bulk and nonbulk packaging will meet the corresponding specifications in 49 CFR 173 referenced in the Hazardous Materials Table, 49 CFR 172, Section 101. Each packaging will conform to the general packaging requirements of Subpart B of 49 CFR 173, to the requirements of 49 CFR 178 at the specified packing group performance level, and to the requirements of special provisions of Column 7 of the Hazardous Materials Table in 49 CFR 172, Section 101 and will be compatible with the material to be packaged as required by 40 CFR 262.

All bulk waste solids will be shipped in lined bulk containers with appropriate covers or tarps. Bulk liquids will be shipped in leak-tight tanks or vacuum trucks. Drums, if used, will be in good condition with sealed/secured lids.

7.7 Marking and Labeling For Transportation

TtEC will provide markings for each DOT and/or TSCA regulated waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 172, Subpart D and 40 CFR 761. Markings must be capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container storage and transportation.

TtEC will provide class 9 container labels for PCB waste that is a hazardous substance consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section 101, Column 6. Labels will meet design specifications required by 49 CFR 172, Subpart E, including size, shape, color, printing, and symbol requirements. Labels will be durable and weather resistant and capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container storage and transportation.

Containers of TSCA regulated waste will have a PCB M_L Mark (yellow square PCB label per 40 CFR 761.45(a)) applied along with the above DOT shipping labels (nonbulk) or placards (bulk).

Each container (non-bulk) that is regulated by TSCA will be marked with the “PCB Out of Service date” (first date the soil, sediment, bedrock, debris is removed from service).

7.8 Shipping documents

7.8.1 Uniform Hazardous Waste Manifest (TSCA Waste)

TtEC will use a UHWM for transporting TSCA regulated waste (waste with PCBs at concentrations at or greater than 50 mg/kg). Transportation shall comply with all requirements in the DOT referenced regulations in the 49 CFR series. TtEC will prepare a UHWM for each shipment (each truck or rolloff or load of drums, etc.) of TSCA regulated waste shipped off site. Manifests will be completed using instructions in 40 CFR 761 Subpart K. The following is to be noted:

- The weight of TSCA waste will be reported in kilograms (K) on the manifest (1 pound equals .454 kilograms).
- The out of service date for the TSCA waste (earliest date the TSCA regulated waste was excavated from the ground) will be stated on the manifest.

Manifests will be submitted to the Generator's representative through the Navy Corrective Action/Site Manager or COR for review, approval, and signature.

The Generator's Representative (through the Corrective Action/Site Manager or COR) will receive one original copy (designated at the bottom of the manifest as "generator's initial copy") of the manifest; the remaining copies will be given to the transporter, including the original top copy. One photocopy and the "generator's initial copy" will be returned to the Navy Corrective Action/Site Manager who will retain one copy for recordkeeping requirements. The second photocopy will be retained on-site in a central project file in the TtEC field office.

The signed terminal (original) UHWM must be received by the Generator no later than day 35 after shipment (40 CFR 761.217). If it is not, the exception reporting requirements will be initiated, which includes tracking of the status and location of the waste and potentially preparation of an exception report on day 45 if the manifest still has not been received.
Significant differences between the quantity or type of waste designated on the UHWM versus what the facility actually receives (manifest discrepancies) must be resolved as per 40 CFR 761.215. TtEC will assist the Generator in resolution of discrepancy if this occurs upon notification of such discrepancy.

7.8.2 Certificate of Disposal (TSCA Waste)

A certificate of disposal will be provided to the Generator by the disposal facility for each UHWM where TSCA waste was sent off-site for disposal.

7.8.3 Non-hazardous Waste Manifests (non-TSCA Contaminated Waste)

Non-hazardous waste (non-TSCA) transported from the site will be accompanied by a non-hazardous waste manifest. TtEC will forward the manifest to the Generator's Representative (through the Corrective Action/Site Manager or COR) for review and signature. The Generator's Representative will be responsible for reviewing and signing the non-hazardous waste manifest. Prior to the manifest being signed, TtEC will ensure that pre-transport requirements of packaging, labeling, marking, and placarding (if the non-hazardous waste is classified as a DOT hazardous substance) are met according to 49 CFR Parts 100 through 177. If possible, two good quality photocopies will be made of the top manifest copy after it has been signed by the transporter. The Generator's Representative will receive one copy of the manifest and one copy of the signed first cover sheet; the remaining copies (including the original top copy) will be given to the transporter. The manifest will be returned to the Generator's Representative (through the

Corrective Action/Site Manager) to be placed on file. The photocopy of the manifest will be maintained in a central project file in the TtEC field office.

TtEC will submit return manifests that have been signed by the disposal facility along with certified weight slips to the Corrective Action/Site Manager within 10 days of waste delivery. TtEC will track waste shipments to ensure original manifests and weight tickets are returned and to ensure waste is disposed at the proper designated facility. The certified weight tickets will contain, at a minimum, the date, the gross truck weight, truck tare weight, the net weight of the materials, and the numerical load for the day. The weight tickets will also contain the transportation company name and the plate numbers of the transportation vehicle.

7.9 Waste Tracking and Documentation

TtEC will record information to track and document waste generation on this project from the point of generation to disposal in a spreadsheet or other suitable format of documentation. This will assist TtEC and the Generator in maintaining compliance with TSCA recordkeeping, transportation, and disposal requirements for both TSCA and non- TSCA wastes and this will also help the project complete the Interim Measures Report. Information will be documented on a daily basis and as required to include the following (as applicable).

- Date waste is generated (TSCA PCB out of service date – the date the media or debris subject to TSCA regulation is first generated) – this may include a date for each TSCA regulated excavation or activity.
- Location and process generated from (e.g., excavation location)
- Container number – unique numbers will be recorded for each container or item including any drum, rolloff, supersack, etc. In some instances for bulk transportation, the manifest will be the unique number required. For drums or loads where more than one container are included, the containers will be numbered for tracking purposes.
- Container weight (supersack or drum of TSCA regulated waste). Under TSCA, each container must have a weight. If TSCA regulated drums are present, this weight must be obtained using a certified scale (each container). For bulk containers, the Defense Reutilization and Marketing Office (DRMO) scale weight will suffice for each load.
- Sample numbers for characterization (as applicable) - all pertinent sample numbers used to characterize a waste from a particular location or container must be cross-referenced to that waste.
- Profile number (pertaining to each waste stream)
- Manifest number (Note: UHWM have numbers that are unique. More than one non-bulk container may be shipped on a manifest if it goes to the same facility.) Non-hazardous waste manifests will be assigned sequential unique tracking numbers as determined on-site.
- Date shipped (date signed by Generator and first transporter)
- Destination facility for the waste
- Date signed terminal manifest received by the Generator (to ensure that exception reporting is able to be performed within 35 days of shipment) or some mechanism to track this date

for exception reporting after TSCA regulated waste is shipped off-site.

7.10 24-Hour Emergency Number for Shipping Document

An emergency response number of a person knowledgeable about the hazardous materials/substances being shipped and who has comprehensive emergency response and incident mitigation information and is available 24-hours per day must be listed on all UHWM as well as any DOT-regulated non-hazardous waste shipping documents.

For NSA Crane generated waste, this number will either be provided by the Generator for inclusion on the manifest or the intended disposal facility will provide their 24-hour emergency number for inclusion on the manifest.

7.11 Manifest Review

Manifests (UHWM and non-hazardous waste manifests) will be reviewed immediately prior to shipment to ensure accuracy and that all required fields are filled in. TtEC will be responsible for ensuring that the Generator's Representative (coordinated through the COR) has signed and dated the manifest, the transporter has signed and dated the manifest, all appropriate fields are filled in, and the original manifest accompanies each load that leaves the site.

Once a UHWM has been signed by the Generator's representative, changes will not be made to the information (e.g., designated transporters, receiving facility, proper shipping description, etc.) on the manifest without Generator approval in advance.

7.12 Weight Determination

All trucks hauling waste materials will be required to weigh-in and –out at the DRMO scales before a signed manifest will be provided.

7.13 Placarding

For each off-site shipment of waste subject to DOT regulation (TSCA waste or non- TSCA hazardous substances in Class 9), TtEC will provide placards consistent with the requirements of 49 CFR 172, Subpart F. Placards will be provided for each side and each end of bulk packaging, freight containers, and/or transport vehicles requiring such placarding. Placards may be plastic, metal, or other material capable of withstanding, without deterioration, a 180-day exposure to open weather conditions and shall meet design requirements specified in 49 CFR 172, Subpart F.

In accordance with TSCA, the PCB M_L mark will also be placed on exterior of bulk containers of PCBs, including rolloff bins, bulk supersacks, conex boxes or other unit load devices.

8.0 RECORDKEEPING

8.1 Interim Measures Report Waste Information

TtEC will submit information for all contaminated waste transported, treated, stored, or disposed including profiles, manifests, certified weight slips, analytical reports, disposal certificates, etc., and a summary of volumes of waste shipped and disposed in each location within the Interim Measures Report.

APPENDIX C

ENVIRONMENTAL PROTECTION PLAN

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND, ATLANTIC
REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62470-13-D-8007
CONTRACT TASK ORDER NO. WE38

FINAL
ENVIRONMENTAL PROTECTION PLAN
SOLID WASTE MANAGEMENT UNIT (SWMU) 17/04
POLYCHLORINATED BIPHENYL (PCB) CAPACITOR BURIAL/POLE YARD
NAVAL SUPPORT ACTIVITY (NSA) CRANE
CRANE, INDIANA

June 2016

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Revision	Date	Prepared by	Approved by	Pages Affected
0	6/10/16	J. Peters	D. Kearns	All

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ACRONYMS AND ABBREVIATIONS

APP	Accident Prevention Plan
BMP	Best Management Practice
CFR	Code of Federal Regulations
CTO	Contract Task Order
DNR	Department of Natural Resources
DOT	U.S. Department of Transportation
EPP	Environmental Protection Plan
E&SC	Erosion and Sediment Control
ETR	endangered, threatened, or rare
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IM	Interim Measure
IMWP	Interim Measures Work Plan
LDPE	low-density polyethylene
mg/kg	milligrams per kilogram
MIDLANT	Mid-Atlantic
MSDS	material safety data sheet
NAVFAC	Naval Facilities
NOI	Notice of Intent
NOT	Notice of Termination
NSA	Naval Support Activity
NSWC	Naval Surface Warfare Center
NPDES	National Pollutant Discharge Elimination System
PCB	polychlorinated biphenyl
PM	Project Manager
RAC	Remedial Action Contract
RCRA	Resource Conservation and Recovery Act
COR	Contracting Officer’s Representative
SDS	safety data sheet
SHM	Safety and Health Manager
SS	Site Superintendent
SSHO	Site Safety and Health Officer
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TSCA	Toxic Substances Control Act
TtEC	Tetra Tech EC, Inc.
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WMP	Waste Management Plan
WQC	Water Quality Certification

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1.0 INTRODUCTION

Tetra Tech EC, Inc. (TtEC) has prepared this Environmental Protection Plan (EPP) for performance of an Interim Measure (IM) at Solid Waste Management Unit (SWMU) 17/04 - Polychlorinated Biphenyl (PCB) Capacitor Burial/Pole Yard at Naval Support Activity (NSA) Crane in Crane, Indiana. This IM is being performed for the United States Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic (MIDLANT), under Remedial Action Contract (RAC), N62470-13-D-8007, Contract Task Order (CTO) WE38.

This EPP describes the procedures for compliance with environmental requirements for the project activities and the measures to be implemented to ensure compliance with federal, state, and local laws and regulations as well as applicable permits to protect land, water resources, air resources, and fish and wildlife resources. TtEC will implement management practices to maintain solid environmental protection of these resources during the project as described in this EPP and as referenced to other plans such as the Erosion and Sediment Control (E&SC) Plan within the text of Interim Measures Work Plan (IMWP), the Waste Management Plan (WMP) as a separate appendix to the IMWP, and the Stormwater Pollution Prevention Plan (SWPPP) as a stand-alone document to be reviewed by Martin County, Indiana Soil and Water Conservation District and approved by Indiana Department of Environmental Management (IDEM).

1.1 Overview and Site History

Crane was originally established in 1941 as the Naval Ammunition Depot for production, testing, and storage of ordnance. In the 1950s, Crane's activities, capabilities and expertise expanded in scope to include small arms, sonobuoy surveillance, microwave tubes, POLARIS missiles and other scientific and engineering support. In the 1960s, Crane began providing technical support for weapons systems including logistics, in-service engineering, repair overall, and design. In the 1970s Crane's support began to include batteries, rotating components, electronic components, failure analysis and standard hardware and new technologies related to night vision systems. In 1974, Crane came under the Naval Sea Systems Command that was established from the merger of the Naval Ordnance System Command and Naval Ship Systems Command and Crane's name was changed to the Naval Weapons Support Center. In 1977, a major change occurred with the designation of the Army as the single-service manager of conventional ammunition. This resulted in the establishment of the tenant command, Crane Army Ammunition Activity that took over the loading, assembly and storage of ammunition at the installation. In 1992, Crane's name was changed to the Crane Division, Naval Surface Warfare Center (NSWC) when the warfare centers were established under the related systems commands. As part of the Department of the Navy's installation claimant consolidation, Crane was designated as a NSA in the late 1990s. Crane Division, NSA remains a major tenant and holds all environmental permits on behalf of the Commanding Officer including the federal portion of the Resource Conservation and Recovery Act (RCRA) storage permit IN5170023498, which was issued to NSA in 1989, establishing the Hazardous and Solid Waste Amendments Corrective Action Requirements and Compliance Schedules. Under the RCRA storage permit, NSA Crane may undertake interim measure activities to prevent or minimize the further spread of contamination within SWMUs while long-term remedies are pursued.

According to RCRA storage permit IN5170023498, poles and transformers were stored in the PCB-Pole Yard. Reportedly, three sealed capacitors containing PCBs were buried here in 1977. An interim measure (IM) was conducted in 2004 during which a large area of buried electrical equipment (insulators) and other debris was discovered. A search of the most upgradient portion of SWMU 17/04 in the northwest ditch revealed the presence of a small transformer and more debris. Post-excavation sampling indicated that PCBs remained in (1) the surface soil in the northwest ditch and (2) the area between Building 357 and the asphalt paved road but did not identify the extent of the remaining contamination. Neither area was excavated at this time.

Based on the results of subsequent sampling events, further IMs were recommended to address PCB contamination in soil and sediment of floodplains, ditches, streams, and building areas at SWMU17/04:

- Removal of soil and sediment from the channels and floodplain areas in the northwest ditch, near the top of Ditch 2, Ditch 8, Boggs Creek stream segment 1, and Ditch 3 stream segments 2 through 6;
- Removal of soil near buildings 357 and 2721;
- Removal of soil in the dump/fill area near building 3072;
- Removal of debris from the buried electrical equipment near building 3072; and
- Removal of approximately 10 tons of debris in the surface of the western portion of the dump/fill area (coincides with the eastern most portion of the northwest Ditch).

An IM (Phase 1) was conducted in 2013 that required excavation and off-site disposal of PCB-contaminated soil on the ridge tops near selected buildings. Phase 2 was implemented in 2013/2014 and required excavation of PCB-contaminated soil and sediment in ditches, streams, and floodplains down-gradient of the ridge tops. In July 2014, while excavating Ditch 3 segment 6, a small amount of black sludge containing PCBs was discovered in shallow bedrock near the storm sewer outlet at the headwaters of Ditch 3. The *Draft Final Interim Measures Report for SWMU 17 - PCB Capacitor Burial/Pole Yard* (Tetra Tech 2015) was submitted to the United States Environmental Protection Agency (USEPA) in April 2015.

Additional sampling has been performed along the ridge top near building 2721 and in Ditch 3 to identify additional sources of PCB contamination and revise the conceptual site model. Residual PCBs are re-contaminating Ditch 3. Two sediment traps have been installed and one fortified to limit possible downstream recontamination. The most downstream sediment trap was destroyed in heavy rains.

This IM will be performed per the requirements of RCRA storage permit IN5170023498 in areas identified for removal action as specified in the IMWP. Handling and disposal of PCB-contaminated soil and sediment will be per the Toxic Substances Control Act (TSCA) as identified in the WMP.

1.2 Description of Work

The primary work that will be performed during this IM includes the following field tasks which are described in further detail within this EPP.

- Clearing of vegetation and trees
- Excavation and removal of PCB-contaminated soil, sediment, bedrock, and associated debris in various areas, including streams, sediment traps, floodplains, former oil water separator, and hotspots to required depth and/or bedrock. Grubbing of tree roots will also be performed during excavation tasks
- Drying of wet sediment or soil within a sediment/soil handling area to ensure waste is suitable for off-site transportation and disposal at a landfill (including addition of a drying agent as required)
- Field sampling (immunoassay test kits) and confirmation soil/sediment/bedrock sampling to confirm cleanup levels have been achieved for PCBs in soil, sediment, and bedrock.
- Backfilling and site restoration activities
- Waste disposal (covered in the WMP)

1.3 Updating the Environmental Protection Plan

This EPP will be updated as changes in site activities or conditions or changes in applicable regulations occur. Revisions to this EPP will be reviewed and approved by the Navy. Future changes to this plan, when final, will be made in accordance with the Contractor Quality Control Plan through the issuance of Field Change Requests, Design Change Notices, or a more formal plan revision for significant regulatory changes.

1.4 Environmental Manager Designation

TtEC will designate an on-site Environmental Manager to oversee the environmental goals for the project and to implement procedures for environmental protection as described in this EPP. Unless otherwise designated by the Project Manager (PM), the project Quality Control Manager will be the designated on-site Environmental Manager. The on-site Environmental Manager is responsible for either performing or overseeing the following actions.

- Compliance with applicable federal, state, and local environmental regulations, including maintaining required documentation
- Implementation of the IMWP with E&SC Plan
- Implementation of the WMP
- Implementation of this EPP
- Implementation of the SWPPP
- Environmental training (or verification of training) for TtEC and subcontractor personnel in accordance with their position requirements
- Maintaining required permits and associated recordkeeping and documentation
- Monitoring and documentation of environmental procedures

The on-site Environmental Manager name and contact information is included in the Contact Information Table included in Appendix A.

2.0 REGULATORY FRAMEWORK

The Navy, with oversight from the USEPA Region 5, determined that (IM actions would be conducted to remove soil with total PCB concentrations greater than 1 milligram per kilogram (mg/kg) throughout SWMU 17. Corrective actions at SWMU17/04 are being performed under an USEPA/IDEM work sharing agreement.

This IM will be performed per the requirements of RCRA storage permit IN5170023498. Handling and disposal of PCB-contaminated soil and sediment will be per the TSCA. The scope of this CTO is to conduct all work required to perform IMs at SWMU17/04. All work will be performed following applicable and appropriate Department of Defense guidance and policy for the Navy Environmental Remediation Program and will consider all site documentation and reports to date. Several environmental permits are also required for the work as described in this EPP, Section 3.0.

Off-site activities such as waste transportation and disposal of hazardous material and waste are addressed in the WMP.

3.0 ENVIRONMENTAL PERMIT REQUIREMENTS

3.1 Storm water Construction General Permit, IDEM Rule 5

TtEC will seek coverage under the IDEM National Pollutant Discharge Elimination System (NPDES) General Permit Rule Program (327 *Indiana Administrative Code* (IAC) 15-5-2), Rule 5 regulations, because this project will disturb one acre or more of land. A Construction Plan/SWPPP will be prepared and submitted separately to the Navy review; then for review by Martin County Soil and Water Conservation District. The Construction Plan/SWPPP, along with a review approval from Martin County and a Notice of Intent (NOI) will be submitted to IDEM Office of Water Quality in accordance with IDEM Rule 5.

Compliance with the SWPPP will be maintained throughout the project duration. When work has been completed, a Notice of Termination (NOT) will be submitted in accordance with Section 8 of the NPDES General Permit Rule Program.

3.2 Section 401 Water Quality Certification

During prior IM work performed by others and as documented in the *Draft Final Interim Measures Report for SWMU 17 - PCB Capacitor Burial/Pole Yard*, a review of the planned excavation areas by the Indiana Department of Natural Resources (DNR) was performed to determine whether any endangered, threatened, or rare (ETR) species were close enough to the

Phase 1 remediation areas to be adversely affected. This review of the Indiana Heritage Database identified no ETR species close enough to SWMU 17/04 to be adversely affected. Prior consultation with the United States Army Corps of Engineers (USACE) determined that submittal of an application for a 401 Water Quality Certification (WQC) permit from the Indiana Department of Environmental Management (IDEM) would be required, to include the results of the Heritage Database review. The required WQC application was submitted to IDEM on 15 April 2013. The permit application was resubmitted on behalf of Naval Facilities (NAVFAC) on 17 May 2013 with the requested supplemental information and was tentatively approved by issuance of a Preliminary Jurisdictional Determination.

No further Heritage Database Review is necessary to support the IDEM 401 WQC as this review was performed in support of the previous IM work as described above. TtEC assisted the Navy in the amendment the existing IDEM 401 WQC, obtained during the previous IM work and extended by the Navy. TtEC complied with the conditions specified in the Section 401 WQC. A letter from IDEM, dated April 14, 2016, approving the modification and extension to the existing 401 WQC until May 1, 2017, is provided in Appendix B of this EPP.

3.3 Tree Clearing Permit

TtEC will obtain a Tree Clearing Permit from the Navy if any trees larger than 3 inches in diameter need to be removed during the IM. Trees larger than 3 inches in diameter are considered suitable Indiana bat (*Myotis sodalist*) roosting and foraging habitat. The Indiana bat is a federally endangered species.

Mobilization and tree removal is expected to occur between February 15 and March 31 to so that there is no impact to Indiana bat habitat. Tree removal will take place in accordance to the Memorandum of Understanding between NSA Crane and the United States Fish and Wildlife Service (USFWS). Prior consultation has taken place and the USFWS has confirmed that the project should have no impact on Indiana Bat as long as trees are removed prior to March 31 or anytime outside the no-cut season.

4.0 ENVIRONMENTAL PROTECTION MEASURES

The following sections detail the environmental protection measures that will be incorporated into daily field activities and project administration to ensure the project is protective of the environment and to control the potential spread of contamination.

4.1 Hazardous Material Management and Spill Prevention

TtEC will properly manage and control hazardous materials used on-site and fuel for operation of construction equipment and fuel-operated tools. Proper storage and use of hazardous materials, proper refueling, and preventative maintenance and inspection of construction equipment will help minimize the potential for spills that could cause harm to the environment.

The following protocols and/or tasks will be performed to manage materials used on site.

- Containers of hazardous materials, fuel, and other petroleum, oil, and lubricants brought on-site or used on-site will be labeled as to contents and associated hazards (original labels from manufacturer preferred when available).
- Hazardous materials will only be brought to the site in the minimum quantities needed to perform the immediate task.
- TtEC will use environmentally friendly products over those with more harmful chemical content whenever possible as long as the material is capable of meeting the use requirements and specifications.
- Hazardous material storage areas will be located in a controlled work area under contractor control in the laydown/storage area. No hazardous material will be stored within the floodplain or within contaminated work areas. Secondary containment will be provided for fuel and other hazardous materials in storage. Flammable hazardous materials will be stored within a flammable storage locker.
- A Hazardous Material Inventory as well as material safety data sheet (MSDS) or safety data sheet (SDS) for hazardous materials used on-site (by TtEC and subcontractors) will be kept in a binder at the field office. The Hazardous Material Inventory and MSDS/SDS is included in Appendix F in the Accident Prevention Plan (APP). As materials are brought on site, the inventory will be updated and MSDS/SDS provided. The inventory and copies of MSDS/SDS will be made available to the Navy upon request.
- Containers of hazardous materials and fuel will be constructed with closeable lids, which will be kept closed except when in direct use.
- Fuel containers will be metal, Underwriter's Laboratory-listed and in good condition.
- Preventative maintenance will be performed on construction equipment and vehicles to minimize chances for hose and other equipment failure.
- The operator of the construction equipment and site vehicles will conduct a daily inspection of the equipment in accordance with Construction Procedure CP-7 (copy of the form is included in the APP). The Site Superintendent (SS) will verify that this procedure is being followed and that corrective actions are being performed when deficiencies are found.
- Other maintenance (major maintenance or oil changes) will be performed off-site at an equipment repair facility.
- Good housekeeping operations will be followed at all times and hazardous materials will be stored in authorized storage areas where rain cannot contact the materials and such that the materials do not become damaged.
- Absorbent materials (e.g., sorbent pads, sorbent socks, chemical protective gloves, and bags) will be staged in an accessible location to active work areas and fuel storage/refueling areas for responding to or catching potential spills that could occur (e.g., overfill of fuel tank, leaking hydraulic hose, etc.).
- Portable spill basins or secondary containment structures will be placed under refueling points during refueling or transfer of fuel to minimize the chance of a spill reaching the ground.
- Refueling of construction equipment will be achieved through a fuel delivery vendor or will be achieved by a designated TtEC or subcontractor using a Department of

Transportation (DOT)-exempt truck bed mounted tank and refueling system. Trucks and tanks will be in good condition with all hoses and fittings tight and not leaking. Overfill prevention during refueling will be verified visually by the operator who is in constant supervision of that task. Small refueling operations (e.g., small generator, chainsaws, pumps, etc.) will be via the designated equipment operator using small portable UL-listed containers.

- Hazardous materials handling operations will not be conducted when the weather could cause significant risk to surrounding area if a spill should occur (e.g., significant rain, wind, snow, etc.).
- Containers of unused or remaining hazardous material used on this project will be transported off site at the end of the project to be reused at other projects.
- Hazardous materials will only be used for their intended purpose in accordance with manufacturer instruction.

TtEC will not exceed the storage capacity limit of 1,320 gallons fuel or oil storage in containers that are 55 gallons or greater in size and at the present time, there is no need to prepare a Spill Prevention, Control, and Countermeasures Plan per 40 Code of Federal Regulation (CFR) 112. Spill response and reporting are addressed in Section 5.0 of this EPP and as referenced to equivalent sections of the APP emergency spill plans.

4.2 Protection of Surface Water Quality

Erosion and sediment control measures and contaminated media control measures will be implemented by TtEC and subcontractors performing construction work to reduce or eliminate erosion and sedimentation of soils and sediments, including associated contamination present in soil and sediments that could harm adjacent and down-gradient surface water quality. Excavation-related activities that will be performed during the IM are within Ditch 3, an unnamed tributary of Boggs Creek, and adjacent to Ditch 3. Runoff of surface water from the proposed Ditch 3 flows into Boggs Creek. Boggs Creek eventually discharges into Lake Gallimore, created by Boogs Creek Dam No. 1, which in turn discharges back into Boggs Creek, which eventually discharges into the East Fork White River.

Due to site conditions and access limitations, temporary haul routes will be constructed to allow access to excavation areas. A temporary creek crossings (using timber mats) will be required. Where haul routes are provided, construction entrances will be installed to control ingress and egress as specified in the SWPPP. Haul routes will be bordered with downgradient silt fences and other sediment control measures, as needed, to prevent the runoff of soil or sediment associated with temporary haul routes into Ditch 3.

Sequential check dams with either pipe-around or a pump-around systems will be used to divert water from Ditch 3 prior to excavation within each segment of Ditch 3 to minimize transport of sediment, including contaminated sediment in creek water, if water is flowing at the time of excavation.

Any spillage of PCB-contaminated soil that occurs during execution of field activities will be promptly cleaned up by TtEC.

4.2.1 Stormwater Pollution Prevention and Erosion Control

As stated in Section 3.0, TtEC has prepared an E&SC Plan as part of the IMWP and a SWPPP as a stand-alone document. The SWPPP will include a construction plan and information on the best management practices (BMPs) that TtEC and subcontractors will implement to protect surface waters from pollution in stormwater and from the effects of erosion during construction activities. BMPs include structural BMPs such as silt fence, straw wattles, temporary and permanent seeding, gravel construction entrances as well as non-structural BMPs such as dust control, good housekeeping, and inspections, etc.

All erosion and sediment control devices will be inspected and maintained until the Navy Corrective Action/Site Manager or COR has formally accepted the permanent stabilization of the disturbed areas. Additional specific information regarding stormwater pollution prevention and erosion controls are included in the SWPPP. The Indiana Storm Water Quality Manual (IDEM, 2007) will be used in preparation of the E&SC Plan within the IMWP and the SWPPP.

4.2.2 Contaminated Soil and Sediment Stockpile Management

Soil and sediment that is wet and is not suitable for direct load-out for disposal will be brought to the sediment/soil handling pad where it will be processed as required to render it suitable for transportation off-site and disposal in a landfill (solidification to pass the paint filter test). An amendment may be used to facilitate the solidification/drying process. The pad will be approximately 50 feet wide x 40 feet long. The perimeter of the pad will be bermed with of thirty-six concrete blocks lined with 16-ounce non-woven geotextile, 40-mil light duty polyethylene liner pre-manufactured panel, 16-ounce non-woven geotextile, and a 6-inch layer of 1 ½” dense graded aggregate working surface. A portion of the pad will be physically separated by an interior berm of concrete blocks and separately lined with 40 mil-LDPE to serve as a handling area for potentially TSCA level sediments. The sediment pad will be bermed so that run-off water will not come in contact with stockpiled soil during storm events. Prior to placement of the pad, TtEC will sample the soil to establish pre-existing PCB concentrations in underlying soils. Additionally, samples will be collected following the pad removal to verify the liner system did not fail during containment.

The design of this pad will be capable of containing contaminated wet soils and sediments such that processing of the soil for transportation does not cause runoff, leachate, or discharge to occur outside of the berm. The pad will be designed on a slight incline or with a sump area so that leachate from the soil can be collected and pumped into an adjacent frac tank for settling and later disposition as described in the WMP. The cover liner (for when the pad is not in active use or on evenings, weekends, and rainy and windy days) will extend over the berms and will be anchored or ballasted with sand bags to prevent it from being removed or damaged by the wind and to prevent run-on by rainfall. The downgradient exterior of the pad will be bordered with both a silt fence and straw bales. Any spillage of PCB-contaminated soil that occurs outside of the containment pad will be promptly cleaned up by TtEC.

4.2.3 Dust Control and Off-Tracking Control

Fugitive dust emissions from construction operations will be visually monitored at all times. The following are potential dust-generating activities: vehicle and truck traffic on paved and unpaved roadways; excavation and handling of dry soil, including loading and unloading of trucks; sediment and soil handling at the sediment/soil pad, including mixing in of soil amendment; and scraping/breaking up of bedrock. Removal of surface vegetation can also lead to increased dust if surface soils become exposed and are subject to wind or traffic. With dust generation in contaminated areas, contaminants (i.e., PCBs) can also be dispersed and mobilized with the dust leading to the spread of contaminants. Dusts can not only be an air contaminant; but can also contact stormwater and be released with runoff.

A water truck or other appropriate dust control equipment will be dedicated to the site activities such as excavation, hauling and removal operations to control fugitive dust.

The following controls will be implemented to control fugitive dusts during construction, which also control off-tracking of contaminants outside contaminated work areas.

- Actively used unpaved roads in the project construction sites will be watered (misted) as needed to control fugitive dust emissions. The frequency of watering will be determined in the field to properly accommodate actual site conditions to minimize fugitive dust and to not create an over-wet condition creating mud or runoff. Watering will be reduced or eliminated during periods of precipitation.
- Bulk-loaded trucks used for transportation of soil and other heavy earth-moving equipment will not be allowed to exit the construction sites, except through one of the track-out prevention control points, including, as required, proper decontamination as specified in the IMWP. Construction entrances are described further in the SWPPP and E&SC Plan.
- Construction areas adjacent to any paved roadway will be treated with appropriate BMPs (e.g., silt fence, straw wattles) as specified in the E&SC Plan within the IMWP and the SWPPP.
- Vehicle speeds on unpaved roads will be reduced to an acceptable level that reduces dust generation.
- Fugitive dust monitoring will be by visual means. Operators and supervisors are responsible for monitoring their work areas and notifying their supervisor if dust controls are needed and ensuring that dust controls are implemented for continuation of the activity.
- Trucks carrying contaminated soil, sediment, and bedrock will be lined and tarped prior to movement from a contaminated area and when transported off-site. Trucks will not be routed into contaminated areas such that their tires become contaminated.

- Soil in the sediment/soil handling pad could be subject to wind erosion if the soil is dry and left uncovered. Covers will be provided for such occasions if fugitive dust is generated.
- Dense graded aggregate (and mulch if required) will be applied on existing haul roads as deemed appropriate to minimize fugitive dust or adhering mud and to provide a stable base for construction traffic.
- Vehicle trips will be minimized by means of proper planning and efficient operations in accordance with the Traffic Management Plan in the IMWP.
- The area subject to excavation and other construction activity will be limited to only the amount of active areas that can be properly maintained by the work crews and equipment at hand. Open excavations will be sampled and backfilled as expediently as possible to limit open excavation and exposed soil for long durations.
- The height from which excavated soil is placed either into trucks or stockpiles will be minimized to reduce dust generation and potential slopping of wet materials in truck beds.
- Trucks moving PCB-contaminated soils will be loaded over a plastic liner or equivalent to assist in the cleanup of any soil inadvertently spilled during the loading process.
- Trucks will be inspected for loose adhering materials on the outside of vehicle bed prior to movement out of the contaminated area.
- Truck traffic will be minimized to the shortest haul routes from the various work areas when possible.
- Clean backfill soil will also be wetted on an as-needed basis to maintain moisture and to limit dust generation during application and grading.

4.2.4 Terms and Conditions of the 401 Water Quality Certification

The work performed under this IM will be done in compliance with the conditions imposed in the approved 401 WQC previously submitted in the Stream Restoration Plan (Cardno, 2014).

4.3 Protection of Fish, Wildlife, and Natural Resources

TtEC will minimize interference with, disturbance and damage to fish, wildlife, and vegetation (plants and trees) whenever possible. TtEC will not feed animals and will ensure that refuse is appropriately contained within on-site refuse containers and that the containers are kept closed and regularly serviced so as not to be an attractive nuisance to local wildlife.

TtEC will not alter water flows or otherwise significantly disturb the native habitat adjacent to the project except as required to perform the project specified removal action and restoration activities.

TtEC will stay within the construction limits that are established to accomplish the fieldwork as described in the IMWP and will follow the Traffic Management Plan included as part of the IMWP.

TtEC will restore disturbed areas to an equivalent or improved condition upon completion of work as specified in the IMWP and the *SWMU 17 – Phase 2 Stream Restoration Plan* (Cardno,2014). Restoration will include placement of native seed mix, fluvial sediment and stone, use of erosion blankets, straw mulch, and fiber roll (for steep slopes), and installation of a maximum of 350 bare root trees. Trees will be installed in a dormant state once remediation and restoration activities have been completed.

Clean fill will be brought in for use as backfill in excavation areas and during restoration activities from an approved borrow source. The fill will be sampled and analyzed as described in the IMWP to ensure it meets site-specific screening levels and other applicable geotechnical parameters.

Tree removal will be performed to the extent required for access to work areas and as required to conduct excavation and restoration activities. As specified in Section 3.0, a tree clearing permit is required for removal of trees larger than 3-inches in diameter which provide suitable habitat and foraging for Indiana bats. During the spring and summer, Indiana bats roost in trees and forage for insects primarily in riparian and upland forests In 1997, NSA Crane received a letter from the USFWS stating that, in their opinion, NSA Crane had an abundance of Indiana bat habitat and that any activity that would result in the clearing of woody vegetation may affect the Indiana bat and would require consultation under the Endangered Species Act. The USFWS recommended interim guidelines for protecting Indiana bats and their habitat from silvicultural activities, and these recommendations were immediately implemented by NSA Crane under the timber management program (Tetra Tech, 2015). The cutting of trees at NSA Crane is restricted to certain times during the year and the cutting of shagbark hickory trees (potential Indiana bat habitat) is prohibited. Trees that are not to be removed and/or the limits of tree removal will be marked and delineated appropriately (e.g., with high visibility fence) so they can be protected from damage or inadvertent removal.

A summary of Indiana bat-related restrictions prepared by the NAVFAC Crane Natural Resources Office (i.e., "bat primer") is as follows.

- Woody vegetation that is 5 inches in diameter or greater measured at 4.5 feet above the ground surface may not be removed between April 1 and September 30.
- Standing dead trees may not be removed between April 1 and September 30.
- Timber harvesting may occur between October 1 and March 31 without a case-by-case consultation provided the interim guidelines for silvicultural treatment issued to the NSA Crane Natural Resources Office by the USFWS are followed.
- During emergency situations, necessary and prudent tree removal is allowed at all times without consultation. Though the need for emergency tree cutting is unlikely, any emergency tree cutting that occurs from April 1 through September 30 must be reported immediately to the NAVFAC Crane Natural Resources office and must be reported to the USFWS within 24 hours of the tree cutting.
- Brush clearing of woody vegetation less than 3 inches in diameter measured at 4.5 feet above the ground may occur at any time of the year without consultation.

- All other tree removal or clearing projects not covered above must be submitted to the NAVFAC Crane Natural Resources Office for informal consultation with the USFWS on a case-by-case basis.

4.4 Odors

Portable sanitary facilities (restrooms and hand washing stations) will be provided for the number of field staff and will be regularly serviced by a vendor at least once per week (or more frequently as necessary). The doors will be self-closing and ventilated to control odors.

Hazardous and nonhazardous wastes will be properly contained and managed for disposition off-site as discussed in the WMP.

4.5 Noise

TtEC will make the maximum use of low-noise emission products, as certified by the USEPA. Generators used on-site will be "whisper quiet" or will be shielded to control noise. Construction equipment and vehicles will have working mufflers as per manufacturer's requirements.

4.6 Worksite Inspections

Daily inspections of the work areas will be performed by the Environmental Manager and documented in a logbook. Deficiencies found during inspections will be corrected upon discovery or reported to the SS for resolution.

Weekly inspections of the work areas will be performed and documented in accordance with TtEC Procedure EHS 3-3 – EHS Inspections. The inspections are primarily performed by the SS or Site Safety and Health Officer (SSHO) as described in the APP; however the Environmental Manager will participate or assist in these inspections. Deficiencies will be documented on the inspection form, reported to the SS, and corrective actions will be documented when completed. A copy of the EHS 3-3 weekly inspection form is included in an appendix of the APP. The SS is responsible for ensuring the inspections are being performed and that corrective actions are identified and completed.

As stated in Section 4.1, the operator of construction equipment and site vehicles will conduct a daily inspection of the equipment in accordance with Construction Procedure CP-7 (copy of the form is included in the APP). The SS will verify that this procedure is being followed and that corrective actions are being performed when deficiencies are found.

Waste accumulation area inspections and frequencies are addressed in the WMP. Storm water related inspections and frequencies are addressed in the SWPPP and E&SC Plan.

Findings of inspections will also be communicated to the workers during site briefings to promote or identify changes in work practices to help avoid repeated findings or deficiencies.

5.0 SPILL/RELEASE CLEANUP AND REPORTING

The environmental protection measures described within this EPP will help to minimize the potential for spills to occur during construction activities on this project. However, the possibility exists that a spill could occur and this section details how TtEC will cleanup and report spills.

5.1 Spill/Release Cleanup

Potential spills could occur during construction activities as follows: spills of PCB-contaminated sediment/soil dewatering pad liquids, decontamination water or solvent; spills from vehicle fueling, lubrication, and maintenance; spills of fertilizers; breakage of fuel line or hydraulic hose on construction equipment; spills of small quantities of laboratory chemicals used in sample collection; and also spills of contaminated soil onto roadways or temporary access trails from trucks.

The following sections describe spill/release cleanup and reporting associated with the construction activities being performed during the IM. TtEC will promptly clean up spills of any PCB-contaminated sediment/soil that occurs on any temporary access trail or other area of the site (e.g., dewatering/solidification pad) and spills from fuel or other product that occur to soil, sediment or other material during construction.

In the event of a release of hazardous material into the environment, TtEC will contain or control the release whenever possible to lessen damage to the environment. TtEC will clean up the spill in a prompt manner and will make internal and client notifications immediately upon discovery of a spill.

If the area of the spill is significant or represents an immediate health threat, the spill will be considered an emergency and the primary action will be to evacuate and notify as per the Emergency Plan contained within the APP. Spills that enter storm drains or conveyances or surface waters or that present a fire or explosion hazard will require emergency spill response outside the immediate capability of TtEC resources; however TtEC will assist in cleanup once the emergency has been sufficiently controlled and mitigated.

TtEC will maintain enough spill control materials (sorbent boom, sorbent pads, kitty litter, and personal protective equipment) to respond to a spill that could occur based on site conditions and quantity of material that could reasonably spill in any one event (e.g., a 100 gallon spill of fuel or oil onto land should an excavator or generator fuel system or hydraulic system fail). In addition, TtEC will maintain shovels, rakes, secondary containment (e.g., kiddie pool), and even excavators and loaders can be used as tools and can be deployed as required to support the cleanup of a spill or to lessen the impact of a spill. The spill materials (in kits for each active work area) will be located in an accessible area and all project personnel will be aware of the location of spill kits. Additional reserve materials will be located in an immediately accessible location in the laydown area to replace or supplement the on-site kits as required. If kits are used, the material will be replaced immediately after the response. Spill kits will be inspected on a monthly basis at a minimum.

Containers for spill cleanup waste may include 55-gallon drums, lined roll-off containers, bulk supersacks, etc. depending upon quantity and type/nature of the spilled material and whether the material is a liquid or a solid, TSCA or non-TSCA regulated. Spill cleanup materials and waste will be containerized, managed, and disposed in accordance with the WMP.

5.2 Spill/Release Reporting

Any spill over the reportable quantity as determined by federal and/or state regulations will be considered a reportable spill, as will any spill below the reportable quantity which is not properly contained and is released into the environment (e.g., spill to a creek or stormwater conveyance/storm drain). The steps below outline the chain of communication that will be followed should a significant spill of fuel, oil, or any hazardous substance (including PCB-contaminated material) occur.

1. If the spill is an emergency (uncontrolled release, release to waterway or drain, spill causes or may cause a fire, spill outside capabilities of TtEC to respond, or injuries have occurred), implement the spill emergency plan in Section 9.2.6 of the APP by calling NSA Crane Emergency Dispatch at **(812) 854-2529 or (812) 854-5316** from cellular telephone or **911** from a landline phone
2. If the spill is not an emergency and it is safe to do so, stop the source of the spill (e.g., shut of valve, shut down equipment, place secondary containment under the leak, etc.) to minimize the effect of the spill to the ground.
3. Site personnel involved in the spill or who witness the spill will immediately (within 15 minutes) contact the TtEC SS. The SS will notify the on-site Environmental Manager, the Navy Corrective Action/Site Manager, and the TtEC PM. The PM will notify the Navy COR. The SSHO will notify the Corporate Safety and Health Manager (SHM). Contact information for Navy and TtEC personnel are included in Appendix A.
4. TtEC will proceed to clean up the spill as directed. The SS with input from the SSHO and on-site Environmental Manager (safety requirements and compliance/waste management) will oversee the cleanup process and will interface with the PM and Navy Corrective Action/Site Manager.
5. TtEC will complete the TtEC and Navy mishap reporting requirements as specified in Section 8.0 of the APP and will assist the Navy in spill reporting to agencies (federal and/or state of Indiana) if the spill is reportable. TtEC will not make agency notifications unless the Navy has been notified and concurs with notification to agencies. Numbers for reporting spills in Indiana are included in Appendix A.
    a. Anyone who has a spill of any material which has the potential to threaten any groundwater or surface water in Indiana must report that spill immediately to the IDEM Office of Emergency Response (24 hour) at 1-888-233-7745.

b. Oil discharge (film/sheen/discoloration) to water surface or shoreline, or violation of water quality standards must be reported to the National Response Center immediately by calling (800) 424-8802.

6.0 ENVIRONMENTAL TRAINING

The on-site Environmental Manager will conduct environmental awareness training for workers on this project at the start of the project and when new employees arrive at the site. Training will include awareness of the environmental requirements within this EPP as well as training to the requirements contained within the E&SC Plan, IMWP, WMP, and SWPPP. Training and awareness on environmental protection will also be included regularly in daily safety meetings. Training will be documented by the on-site Environmental Manager.

Personnel with additional or specific tasks under the IMWP, EPP, SWPPP, or WMP will receive additional training and supervision to ensure they are able to sufficiently perform their assigned tasks (e.g., those who install or maintain storm water BMPs, those who manage project wastes, etc.).

7.0 REFERENCES

IDEM, 2007. Indiana Storm Water Quality Manual, October.

Cardno,2014. *SWMU 17 – Phase 2 Stream Restoration Plan*. January 28, Revised April 9.

Tetra Tech 2015. Draft Final Interim Measures Report for SWMU 17 - PCB Capacitor Burial/Pole Yard. Revision 0. April.

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APPENDIX A

CONTACT INFORMATION

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Environmental Protection Plan Contact Information

EMERGENCY SPILLS	(812) 854-2529 or (812) 854-5316 (from a cellular phone) 911 (from a landline)
Navy Construction Phase COR, Tim Sears	(812) 854-3268 (office phone)
Navy COR, Linda Cole	(757) 341-2011 (office phone) [redacted] (cellular)
Navy Corrective Action/Site Manager, Tom Brent	(812) 854-6160 (office phone) [redacted] (cellular)
TtEC PM, Deric Kearns	(215) 702-4099 (office) [redacted] (cellular)
TtEC SHM, Roger Margotto, CIH	(619) 471-3503 (office) [redacted] (cellular)
TtEC Quality Control Manager, Greg Joyce	(360) 598-8117
TtEC SS, Adair Franklin	(757) 286-3855
TtEC SSHO, Adair Franklin	(757) 286-3855
IDEM Office of Emergency Response (24 hour) - spills	1-888-233-7745
National Response Center (24-hour) – spills	1-800-424-8802
[1/] Subcontractor Key Personnel	

Abbreviations and Acronyms:
[1/] Subcontractor key personnel will be added to this list in the field when identified
CIH – Certified Industrial Hygienist
COR – Contracting Officer's Representative
IDEM – Indiana Department of Environmental Management
PM – Project Manager
RPM – Remedial Project Manager
SHM – Safety and Health Manager
SS – Site Superintendent
SSHO – Site Safety and Health Officer
TtEC – Tetra Tech EC, Inc.

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APPENDIX B

WATER QUALITY CERTIFICATION

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30th IDEM ANNIVERSARY

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

April 14, 2016

VIA CERTIFIED MAIL 91 7190 0005 2710 0048 2570

Mr. Thomas Brent
NAVFAC, Mid-Atlantic, PWD Crane
Code PRCR43, Building 3245, 300 HGWY 361
Crane, IN 47522

Dear Mr. Brent:

Re: Section 401 Water Quality Certification
Project: SWMU 17-Phase II
IDEM No.: 2013-496-51-DDC-A
COE No.: LRL-2013-856-sam
County: Martin

The Indiana Department of Environmental Management (IDEM) has reviewed your correspondence dated March 30, 2016, requesting a modification and an extension of time to complete restoration activities as required in Section 401 Water Quality Certification No. 2013-496-51-DDC-A, dated April 1, 2014. In the original certification, you were granted approval to impact 431 linear feet (LF) of perennial, 1,650 LF of intermittent, 2,228 LF of ephemeral streams, and 0.02 acre of emergent wetland. The purpose of the work is to remediate PCB contaminated soils. The project will require the excavation, then off-site disposal of contaminated sediments at an approved landfill. Upon completion of remediation activities, you will restore the impacted streams and wetland to pre-construction contours, and plant the project area with native herbaceous, shrub and tree plantings. The project is located in the Section 15, Township 5 North, Range 5 West, Indian Springs USGS Quad, in Martin County.

Based on available information, it is the judgment of this office that the proposed modification will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if you adhere to the conditions of the Section 401 Water Quality Certification. Therefore, IDEM hereby modifies the Section 401 Water Quality Certification No. 2013-496-51-DDC-A dated April 1, 2014, as follows:

Project Specific Condition 6 is hereby modified as follows:

6. Complete all activities necessary to implement the restoration plan by May 1, 2017, unless IDEM grants a written extension upon request. These activities include excavation, grading, installation of hydrologic controls, and planting.

All other conditions of the certification not affected by this modification remain in full force as written. Any changes in project design or scope not detailed in the request described above are not authorized by this certification.

This certification modification does not relieve you of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits. In addition, you may wish to contact IDEM's Storm Water Permits Section at 317-233-1864 concerning the possible need for a 327 IAC 15-5 (Rule 5) permit if you plan to disturb greater than one (1) acre of soil during construction.

This certification does not:

(1) authorize impacts or activities outside the scope of this certification modification;
(2) authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
(3) convey any property rights of any sort, or any exclusive privileges;
(4) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
(5) authorize changes in the plan design detailed in the application.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against you. If an enforcement action is pursued, you could be assessed up to $25,000 per day in civil penalties. You may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

This certification is effective eighteen (18) days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18-day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the certification within the scope of the petition for stay is stayed for fifteen (15) days, unless or until an Environmental Law Judge further stays the certification in whole or in part.

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

1. You must petition for review in writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.

2. You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

   Office of Environmental Adjudication
   100 North Senate Avenue
   IGCN Room N501
   Indianapolis, IN 46204

3. You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

Identifying the certification, decision, or other order for which you seek review by number, name of the applicant, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC 4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings, hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

If you have procedural questions regarding filing a petition for review you may contact the Office of Environmental Adjudication at 317-232-8591.

If you have any questions about this modified certification, please contact Jason Randolph, Project Manager, of my staff at 317-409-7580, or you may contact the Office of Water Quality through the IDEM Environmental Helpline (1-800-451-6027).

Sincerely,

Brian Wolff, Branch Chief
Surface Water, Operations, and Enforcement
Office of Water Quality

cc: Scott Mathews, USACE-Louisville, Indianapolis Field Office
Marissa Reed, USFWS
Danny Gautier, IDNR

IDEM
Karla Kindrick
100 NORTH SENATE AVE.
INDIANAPOLIS IN 46204

91 7190 0005 2710 0048 2570

Thomas Brent
Naval Facilities Eng Command Midwes
300 Highway 361
Bldg 3245
Code PRCR43
Crane IN 475224000

Z900000757453

APPENDIX D

SAMPLING AND ANALYSIS PLAN

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SAP Worksheet #1 – Title and Approval Page

APPENDIX D

FINAL

SAMPLING AND ANALYSIS PLAN

(Field Sampling Plan and Quality Assurance Project Plan)

June 2016

INTERIM MEASURES WORK PLAN
SWMU 17/04 – PCB CAPACITOR BURIAL/POLE YARD
NAVAL SUPPORT ACTIVITY CRANE
CRANE, INDIANA

Prepared for:
Department of the Navy
Naval Facilities Engineering Command, Mid-Atlantic
9742 Maryland Avenue
Norfolk, VA 23511-3095

Prepared by:
Tetra Tech EC, Inc.
5250 Challedon Drive
Virginia Beach, Virginia 23462

Prepared under:
Contract No. N62470-13-D-8007
DCN: 4659-WE38-16-0199
CTO No. WE38

Review Signature: Gregory D. Joyce ______________________________ June 10, 2016
Greg Joyce Date
TtEC Quality Control Program Manager

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EXECUTIVE SUMMARY

Tetra Tech EC, Inc. (TtEC) has prepared this Sampling and Analysis Plan (SAP) to provide guidance on sampling, analysis, and quality control (QC) in support of remediation and restoration activities at Solid Waste Management Unit (SWMU) 17/04 – Polychlorinated Biphenyl (PCB) Capacitor Burial/Pole Yard at Naval Support Activity Crane in Crane, Indiana for the United States (U.S.) Department of the Navy, Naval Facilities Engineering Command Mid-Atlantic under a Remedial Action Contract, N62470-13-D-8007, Contract Task Order WE38. The quality assurance/QC elements in this SAP were prepared in accordance with the U.S. Environmental Protection Agency (EPA) Uniform Federal Policy for Quality Assurance Project Plans (EPA 2005) and Requirements for Quality Assurance Project Plans, EPA QA/R-5, QAMS (EPA 2006a) to ensure that all data collected are precise, accurate, representative, complete, and comparable to meet their intended use.

This SAP has been prepared as an appendix to an Interim Measures Work Plan (IMWP) which is based on the Scope of Work (SOW) dated August 11, 2015, the negotiation conference calls between NAVFAC MIDLANT and TtEC on September 8 and 14, 2015, and the email received from NAVFAC MIDLANT on September 17, 2015. Activities to be conducted under this project were developed to remove additional PCB contamination in soil/sediment that has been released from prior operations at SWMU 17/04.

Environmental investigation and remediation activities are being conducted under the Department of Defense Environmental Restoration Program in accordance with the Resource Conservation and Recovery Act Storage permit IN5170023498. The EPA Region 5 will provide regulatory oversight for this project.

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SAP Worksheets

Page

ATTACHMENT

Attachment 1 Laboratory DoD ELAP Accreditation

Abbreviations and Acronyms

%R	percent recovery
µg/kg	micrograms per kilogram
ADR	automated data review
bgs	below ground surface
CA	Corrective Action
CAS	Chemical Abstracts Service
CCV	continuing calibration verification
COC	chain-of-custody
COR	Contracting Officer’s Representative
CTO	Contract Task Order
cu yd	cubic yard
DL	detection limit
DoD	Department of Defense
DQA	data quality assessment
DQO	Data Quality Objective
EDD	electronic data deliverable
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
FCR	Field Change Request
ft	feet
GC/ECD	gas chromatography/electron capture detector
ICAL	initial calibration
IM	interim measure
IMWP	Interim Measures Work Plan
IMR	interim measure report
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
mg/kg	milligrams per kilogram
MS/MSD	matrix spike/ matrix spike duplicate
N/A	not applicable
NAVFAC	Naval Facilities Engineering Command
Navy	U.S. Department of the Navy
NEDD	Navy electronic data deliverable
NIRIS	Naval Installation Restoration Information Solution
NSA	Naval Support Activity

Abbreviations and Acronyms
(Continued)

OWS	oil water separator
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCB	polychlorinated biphenyl
PDF	portable document format
PM	Project Manager
PQCM	Project Quality Control Manager
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QCPM	Quality Control Program Manager
QSM	Quality Systems Manual
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
RPM	Remedial Project Manager
RSD	relative standard deviation
SAP	Sampling and Analysis Plan
S2BVEM	Stage 2B Validation Electronic and Manual
S4VEM	Stage 4 Validation Electronic and Manual
SDG	sample delivery group
SOP	Standard Operating Procedure
sq ft	square feet
SWMU	Solid Waste Management Unit
TtEC	Tetra Tech EC, Inc.
UFP	Uniform Federal Policy
U.S.	United States

SAP Worksheet #2 – SAP Identifying Information

Site Name/Number: Solid Waste Management Unit (SWMU) 17/04 – Polychlorinated Biphenyl (PCB) Capacitor Burial/Pole Yard at Naval Support Activity Crane
Contractor Name: Tetra Tech EC, Inc. (TtEC)
Contract Number: N62470-13-D-8007
Contract Title: Remedial Action Contract VI

1. This Sampling and Analysis Plan (SAP) was prepared in accordance with the requirements of the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) (U.S. Environmental Protection Agency [EPA] 2005) and EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5, QAMS (EPA 2002).

2. Identify regulatory program: Resource Conservation and Recovery Act (RCRA).

3. This SAP is a project-specific SAP.

4. List dates of scoping sessions that were held.

Scoping Session	Date
Conference calls with the U.S. Department of the Navy (Navy)	November 9th and 16th, 2015

5. List dates and titles of any SAP documents written for previous site work that are relevant to the current investigation.

Title	Date
None	

6. List organizational partners (stakeholders) and connection with lead organization: Navy

7. Lead organization: EPA Region 5 will provide regulatory oversight and guidance.

8. If any required SAP elements or required information is not applicable to the project or is provided elsewhere, then note the omitted SAP elements and provide an explanation for its exclusion below:
   - SAP Worksheet #21 (Project Sampling Standard Operating Procedure (SOP) References Table) is not applicable for this project since SOPs are not used and instead procedures are detailed in SAP Worksheet #14.
   - SAP Worksheet #22 (Field Equipment Calibration, Maintenance, Testing, and Inspection Table) is not applicable for this project since field equipment is not required.

SAP elements and required information that are not applicable to the project are noted below. An explanation is provided above and in the appropriate SAP worksheet(s), as necessary.

SAP Worksheet #2 – SAP Identifying Information (Continued)

UFP-QAPP Worksheet #	Required Information	Crosswalk to Related Information
A. Project Management		
Documentation		
1	Title and Approval Page	
2	Table of Contents SAP Identifying Information	
3	Distribution List	
4	Project Personnel Sign-Off Sheet	
Project Organization		
5	Project Organizational Chart	
6	Communication Pathways	
7	Personnel Responsibilities and Qualifications Table	
8	Special Personnel Training Requirements Table	
Project Planning/Problem Definition		
9	Project Planning Session Documentation (including Data Needs tables) Project Scoping Session Participants Sheet	
10	Problem Definition, Site History, and Background Site Maps (historical and present)	
11	Site-Specific Project Quality Objectives	
12	Measurement Performance Criteria Table for Samples	
13	Sources of Secondary Data and Information Secondary Data Criteria and Limitations Table	
14	Summary of Project Tasks	
15	Reference Limits and Evaluation Table	
16	Project Schedule/Timeline Table	
B. Measurement Data Acquisition		
Sampling Tasks		
17	Sampling Design and Rationale	
18	Sampling Locations and Methods/ SOP Requirements Table Sampling Location Map(s)	
19	Analytical Methods/SOP Requirements Table	
20	Field Quality Control Sample Summary Table	
21	Project Sampling SOP References Table	Not applicable
22	Field Equipment Calibration, Maintenance, Testing, and Inspection Table	Not applicable
Analytical Tasks		
23	Analytical SOPs Analytical SOP References Table	
24	Analytical Instrument Calibration Table	

SAP Worksheet #2 – SAP Identifying Information (Continued)

UFP-QAPP Worksheet #	Required Information	Crosswalk to Related Information
25	Analytical Instrument and Equipment Maintenance, Testing, and Inspection Table	
Sample Collection		
26	Sample Handling System, Documentation Collection, Tracking, Archiving and Disposal Sample Handling Flow Diagram	
27	Sample Custody Requirements, Procedures/SOPs Sample Container Identification Example Chain-of-Custody Form and Seal	
Quality Control Samples		
28	QC Samples Table Screening/Confirmatory Analysis Decision Tree	
Data Management Tasks		
29	Project Documents and Records Table	
30	Analytical Services Table Analytical and Data Management SOPs	
C. Assessment Oversight		
31	Planned Project Assessments Table Audit Checklists	
32	Assessment Findings and Corrective Action Responses Table	
33	QA Management Reports Table	
D. Data Review		
34	Verification (Step I) Process Table	
35	Validation (Steps IIa and IIb) Process Table	
36	Validation (Steps IIa and IIb) Summary Table	
37	Usability Assessment	

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SAP Worksheet #3 – Distribution List

The following distribution list represents the recipients of the final version of this SAP.

Name of SAP Recipients	Title/Role	Organization	Telephone Number	E-mail Address
Ms. Linda Cole	Contracting Officer's Representative (COR)	Navy	(757) 341-2011	linda.cole@navy.mil
Mr. Peter Ramanauskas	Remedial Project Manager (RPM)	EPA Region 5	(312) 886-7890	ramanauskas.peter@epa.gov
Mr. Tom Brent	Environmental Restoration Site Manager	Naval Support Activity (NSA) Crane	(812) 854-6160	thomas.brent@navy.mil
Mr. Deric Kearns	PM	TtEC	(215) 702-4083	deric.kearns@tetratech.com
Mr. Greg Joyce	Quality Control Program Manager (QCPM)	TtEC	(360) 780-0371	greg.joyce@tetratech.com
Ms. Lisa Bienkowski	Program Chemist	TtEC	(949) 809-5028	lisa.bienkowski@tetratech.com
Ms. Sabina Sudoko	Project Chemist	TtEC	(949) 809-5022	sabina.sudoko@tetratech.com
Ms. Jamie Ide	Laboratory PM	TestAmerica Denver	(303) 736-0126	jamie.ide@testamericainc.com
Ms. Shauna McKellar	Data Validator PM	Laboratory Data Consultants (LDC)	(760) 827-1171	smckellar@lab-data.com

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SAP Worksheet #4 – Project Personnel Sign-Off Sheet

The key personnel listed below will read the final version of this SAP. Their signature and date will be filled in below and included in the project file.

Name	Organization/Title/Role	Signature/E-mail Receipt	SAP Section Reviewed	Date SAP Read
Mr. Deric Kearns	TtEC/PM		Entire document	
Ms. Sabina Sudoko	TtEC/Project Chemist		Entire document	
Ms. Jamie Ide	TestAmerica Denver/Laboratory PM		Entire document	
Ms. Shauna McKellar	LDC/Data Validator PM		Entire document	
*	TtEC/Sampling personnel		Entire document	
*	TtEC/Sampling personnel		Entire document	
*	TtEC/Sampling personnel		Entire document	
*	TtEC/Sampling personnel		Entire document	

Note:

* Field sampling personnel have not currently been identified for this project. Extra lines have been included above for field sampling personnel to sign-off on SAP.

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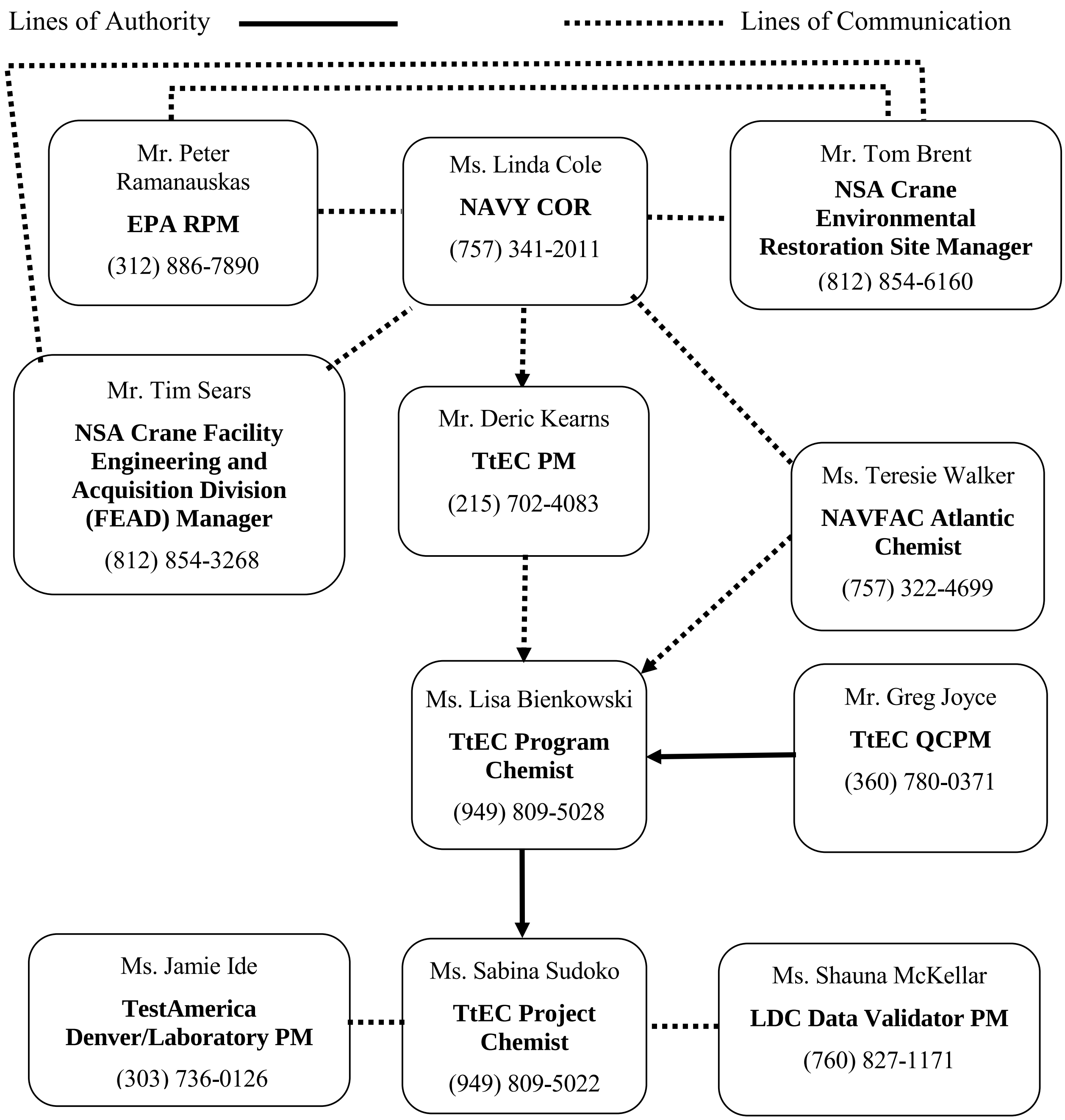
SAP Worksheet #5 – Project Organizational Chart



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SAP Worksheet #6 – Communication Pathways

Communication Drivers	Responsible Affiliation	Name	Phone Number	Procedure
Review and approval of Draft SAP	NAVFAC Atlantic Chemist	Ms. Teresie Walker	(757) 322-4699	The NAVFAC Atlantic Chemist will review and approve the Draft SAP prior to submittal for regulatory review.
Point of contact for significant changes or corrective actions	Navy COR	Ms. Linda Cole	(757) 341-2011	If significant changes or corrective actions occur during the project, the COR will notify the regulators involved in this project.
Point of contact for contractor quality issues	TtEC QCPM	Mr. Greg Joyce	(360) 780-0371	The QCPM is responsible for overseeing program quality control (QC), including construction and analytical data acquisition. The QCPM has the authority to suspend project activities if quality standards are not maintained.
Project management	TtEC PM	Mr. Deric Kearns	(215) 702-4083	If changes are necessary, the PM is responsible for communicating the changes via phone and/or e-mail to the project staff and is authorized to stop work, if necessary.
SAP review	TtEC QCPM	Mr. Greg Joyce	(360) 780-0371	The SAP will be written by the TtEC Program Chemist and reviewed by the QCPM prior to submittal to the Navy for review.
Notification of nonusable analytical results	TtEC Program Chemist	Ms. Lisa Bienkowski	(949) 809-5028	If significant problems are identified by the laboratory or the project team that impact the usability of the data (i.e., the data are rejected or data quality objectives are not met), the Program Chemist will notify the TtEC PM who will in turn notify the Navy COR.
Coordination of laboratory supplies for field sampling activities	TtEC Project Chemist	Ms. Sabina Sudoko	(949) 809-5022	The Project Chemist will contact the laboratory to provide all necessary sample containers and appropriate shipping materials (such as coolers and bubble wrap) to be delivered

SAP Worksheet #6 – Communication Pathways (Continued)

Communication Drivers	Responsible Affiliation	Name	Phone Number	Procedure
				on-site prior to commencement of field sampling activities and throughout the course of the project.
Reporting laboratory data quality issues or analytical corrective actions	TestAmerica Denver Laboratory PM	Ms. Jamie Ide	(303) 736-0126	All data quality issues and associated corrective actions will be reported by the laboratory in writing to the TtEC Project Chemist within 24 hours.
Release of analytical results	TtEC Project Chemist	Ms. Sabina Sudoko	(949) 809-5022	The Project Chemist will review analytical results to verify that the requirements in this SAP have been met prior to releasing the data to the project team for evaluation.
SAP procedure revision during field activities	TtEC Program Chemist	Ms. Lisa Bienkowski	(949) 809-5028	The Program Chemist (or designee) will prepare a Field Change Request (FCR) for any changes in sampling or analytical procedures that occur due to conditions in the field.
SAP addendums	TtEC Program Chemist	Ms. Lisa Bienkowski	(949) 809-5028	Significant changes to the SAP such as additional scope of work that is not covered in this SAP may require that the Program Chemist prepare an addendum to this SAP.

SAP Worksheet #7 – Personnel Responsibilities and Qualifications Table

Name	Title/Role	Organizational Affiliation	Responsibilities
Ms. Linda Cole	COR	Navy	• Performing project management for the Navy • Ensuring that the project scope of work requirements are fulfilled • Overseeing the project cost and schedule • Acting as lead interface with agencies
Mr. Deric Kearns	PM	TtEC	• Coordinating work activities of subcontractors and TtEC personnel, and ensuring that all personnel adhere to the administrative and technical requirements of the project • Monitoring and reporting the progress of work, and ensuring that the project deliverables are completed on time and within project budget • Monitoring the budget and schedule, and notifying the Navy COR of any changes that may require administrative actions • Ensuring adherence to the quality requirements of the contract, project scope of work, and the QC plans • Ensuring that all work meets the requirements of the technical specifications and complies with applicable codes and regulations • Ensuring that all work activities are conducted in a safe manner in accordance with the Site-Specific Safety and Health Plan, U.S. Army Corps of Engineers' Safety and Health Requirements (Engineer Manual 385-1-1), and all applicable Occupational Safety and Health Administration regulations • Serving as the primary contact between the Navy and TtEC for actions and information related to the work and including appropriate TtEC technical personnel in the decision-making • Coordinating satisfactory resolution and completion of evaluation and acceptance report for nonconformance reports • Suspending project activities if standards are not maintained

SAP Worksheet #7 – Personnel Responsibilities and Qualifications Table (Continued)

Name	Title/Role	Organizational Affiliation	Responsibilities
Mr. Greg Joyce	QCPM	TtEC	• Establishing and maintaining the Quality Program • Overseeing program QC, including construction and analytical data acquisition • Working directly with the TtEC PM and the Navy to ensure implementation of the program QC Plans • Acting as a focal point for coordination for quality matters across all projects and resolving quality issues • Suspending project activities if quality standards are not maintained • Interfacing with the Navy on quality-related items • Conducting field QC audits to ensure project plans are being followed • Performing reviews of audit and surveillance reports conducted by others • Approving any FCRs and reviewing the SAP and any addendums to the SAP
Ms. Lisa Bienkowski	Program Chemist	TtEC	• Developing the SAP and any addendums to the SAP • Implementing contract requirements for data collection • Supporting projects as the technical lead for data collection and analysis • Evaluating and selecting qualified laboratories and data validators • Providing oversight of the laboratories with regards to deliverable requirements and monitoring performance of the laboratories • Overseeing preparation of the Navy Electronic Data Deliverable (NEDD) deliverable for analytical results for upload to the Naval Installation Restoration Information Solution (NIRIS) website

SAP Worksheet #7 – Personnel Responsibilities and Qualifications Table (Continued)

Name	Title/Role	Organizational Affiliation	Responsibilities
Ms. Sabina Sudoko	Project Chemist	TtEC	• Main point of contact with the laboratory • Providing project support to ensure sampling supplies are delivered from laboratory to the site • Tracking samples sent to laboratory to ensure laboratory receipt of samples and proper login of samples for analysis • Tracking receipt of analytical results • Reviewing analytical results against requirements in this SAP prior to distribution to the project team • Coordinating third-party data validation • Reviewing data validation reports
Ms. Jamie Ide	Laboratory PM	TestAmerica Denver	• Coordinating with the TtEC Project Chemist regarding sample receipt and discrepancies • Ensuring samples are logged in according to the chain-of-custody (COC) • Checking that analytical results are produced in accordance with this SAP and providing those results to the TtEC Project Chemist at the expected turnaround time • Ensuring that analytical data packages and electronic deliverable requirements are in accordance with SAP Worksheet #29
Ms. Shauna McKellar	Data Validator PM	LDC	• Coordinating with TtEC Project Chemist regarding data validation requirements in accordance with this SAP • Providing data validation reports and electronic deliverables to the TtEC Project Chemist in accordance with this SAP

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SAP Worksheet #8 – Special Personnel Training Requirements Table

Project Function	Specialized Training by Title or Course Description	Training Provider	Training Date	Personnel/ Groups Receiving Training	Personnel Titles /Organizational Affiliation	Location of Training Records/ Certificates
All field team personnel	40 hour HAZWOPER and CPR	TtEC or outside subcontractor	Prior to start of field activities	All field team personnel	All individuals working on the project site	TtEC corporate training record files

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SAP Worksheet #9 – Project Scoping Session Participants Sheet

Project Name: SWMU 17/04 – PCB Capacitor Burial/Pole Yard **Projected Date(s) of Sampling:** May 2016 **Project Manager:** Mr. Deric Kearns	**Site Name:** NSA Crane **Site Location:** Crane, Indiana

Date of Session: November 9th and 16th, 2015

Scoping Session Purpose: Multiple phone and email communications between Navy and TtEC discussing scope of this phase of the project and the planning documents to be developed and submitted.

Name	Title	Affiliation	Phone #	E-mail Address
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SAP Worksheet #10 – Problem Definition

The main problem defined for this project is: Based on analytical results from previous investigations, two areas (the soil/sediment in the immediate vicinity of the concrete culvert at the top of Ditch 3 and the segment of Ditch 3 between Sediment Trap No.1 and No.3 with a majority of the impacts located between Sediment Trap No.1 and No.2) potentially contain contaminants of concern (PCBs) that could pose an unacceptable risk. Therefore, interim measures will be conducted to remove PCB contamination.

SITE DESCRIPTION AND OPERATIONAL HISTORY

Naval Support Activity (NSA) Crane occupies 62,463 acres (approximately 98 square miles) of the southern portion of Indiana. The base is situated approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville Kentucky, immediately east of Crane Village and Burns City (Figure 1-1 of the IMWP).

Much of NSA Crane is forested and deeply incised with natural drainage channels (ditches) and streams. The surrounding vicinity is sparsely populated and consist mainly of wooded areas or farm land.

SWMU 17/04, which is positioned in the northwestern portion of NSA Crane (Figure 1-1 of the IMWP), has been in operation since before the late 1940s. Historical activities at SWMU 17/04 included: storage of electrical capacitors (some PCB containing), storage of electrical transformers (some PCB containing), reported burial of capacitors (some PCB containing), and storage of creosote-impregnated utility poles (some PCB containing, presumably, as a result of leaking transformers). An aerial view of SWMU 17/04 showing the degree of vegetation, associated buildings, as well as roads, other nearby buildings, and utility corridors can be seen in Figure 1-2 of the IMWP. The topography as well as nearby tributaries leading to nearby drainage channels are shown in Figure 1-3 of the IMWP.

Historical operations, mainly in the open lot north of Building 357 (B-357) and Building 2721 (B-2721), at SWMU 17/04 led to the release of PCBs into nearby soils, sediments, and bedrock. Investigations of PCB contamination at B-2721 started as early as 1987; soil and sediment at SWMU 17/04 have been investigated extensively since then. Interim Measures (IM) were recently conducted by Tetra Tech in two phases from April 2013 through September 2014 at SWMU 17/04 to excavate all soil and sediment known to be impacted with greater than 1 milligram per kilogram (mg/kg) of total PCBs. Details of the two phase IM are summarized in the 2013 Final Interim Measures Work Plan (IMWP) for SWMU 17 (Tetra Tech 2013) and the 2014 Interim Measures Report SWMU 17 – PCB Capacitor Burial/Pole Yard (Tetra Tech 2014).

Following completion of the IM, post-excavation sampling revealed that PCBs were still present at SWMU 17/04 within the upper elevations of Ditch 3. As a result, Tetra Tech conducted an additional investigation in 2015 to further delineate PCB impacts. The results of this investigation are summarized in the October 2015 SWMU 17 Additional PCB Source Delineation Sampling Technical Memorandum (Tetra Tech 2016). Tetra Tech identified two main areas of PCB impacts within this document: (1) soil and sediment in the immediate vicinity of the concrete culvert at the

SAP Worksheet #10 – Problem Definition (Continued)

top of Ditch 3, and (2) the segment of Ditch 3 between Sediment Trap No.1 and No.3 with a majority of the impacts located between Sediment Trap No.1 and No.2 (Tetra Tech 2016).

Additionally, PCB concentrations exceeding one (1) mg/kg were identified in a soil and gravel layer beneath a concrete slab which was used to support an old oil water separator (OWS). The OWS area is located approximately 15 feet (ft) northwest of B-2721. Historical documents confirm the OWS was removed circa 1987. The remaining 12 inch (in.) thick concrete slab was found during trenching activities in 2015 approximately four (4) ft below ground surface (bgs). Elevated concentrations of PCBs were identified in soil samples collected from the stained soil and gravel layer beneath the concrete slab (Tetra Tech 2016).

PROJECT OBJECTIVE

The primary objective of this project is to conduct an interim measure to reduce concentrations of PCBs that are present in soils, sediments, and bedrock to levels less than or equal to 1 mg/kg in accordance with the Toxic Substance Control Act (TSCA) High Occupancy Standard, 40 Code of Federal Regulations (CFR) 761.61. This cleanup goal is the result of negotiations with the EPA and is protective of human health and ecological receptors. The IMWP and this SAP has been prepared for the interim measure construction activities at SWMU 17/04 in accordance with the revised SOW dated August 11, 2015.

UPDATED CONCEPTUAL SITE MODEL

The results of sediment and soil sampling during the conclusion of IM Phase 2 in 2014 and from May to July 2015 show that Ditch 3, Segments 4, 5, and 6, which constitute approximately 1,500 feet of sediment in the uppermost portion of Ditch 3, have been recontaminated since the IM. IM activities do not appear to be responsible for this recontamination. Sampling within the concrete culvert pipe shows that very low levels of PCBs (less than 1 mg/kg) are present in sediment within the new 6-footlong section of pipe. This indicates the presence of a PCB source upstream of the culvert outfall, although the measured concentrations are less than the cleanup goal. Soil and sediment samples collected under and adjacent to the new 6-foot-long section of concrete culvert pipe in 2014 indicated that there remains greater than 1 mg/kg PCB contamination immediately under the pipe and probably within 6 to 8 feet laterally of the pipe. One sample, 17SD1380003, collected in 2014 under the joint between the old and new concrete culvert pipes contained 490 mg/kg total PCBs. This and the surrounding residual contaminated soil and sediment were immobilized at the conclusion of IM Phase 2 by covering the contaminated material with several feet of uncontaminated fill. The relatively clean portion of Ditch 3 upstream of Sediment Trap No.1 indicates that limited quantities of PCB contamination are migrating within that region of Ditch 3.

Continued migration of contamination from upper elevations of Ditch 3 to downstream elevations is likely unless the contamination in the upper elevations of Ditch 3 is removed. The two primary sources of contamination are: (1) soil and sediment in the immediate vicinity of the concrete culvert and (2) the segment of Ditch 3 between Sediment Traps No.1 and No.3. Most of the latter contamination is confined to between Sediment Traps No.1 and No.2. Downstream migration of

SAP Worksheet #10 – Problem Definition (Continued)

contamination would increase the potential for exposure of ecological and human receptors to PCB contamination by increasing the potential exposure area. Sediment traps currently prevent the majority of contamination from migrating downstream. A small mass of PCBs has migrated downstream of Sediment Trap No.2 and will continue migrating downstream.

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SAP Worksheet #11 – Project Quality Objectives/Systematic Planning Process Statements

The Data Quality Objectives (DQOs) specify project objectives, data collection boundaries and limitations, the most appropriate type of data to collect, and the level of acceptable decision error. The quality and quantity of data required to implement environmental excavation actions are also defined.

The DQOs, as defined through the seven-step process (EPA 2006b), are as follows:

1. State the problem

The main problem defined for this project is: Based on analytical results from previous investigations, two areas (the soil/sediment in the immediate vicinity of the concrete culvert at the top of Ditch 3 and the segment of Ditch 3 between Sediment Trap No.1 and No.3 with a majority of the impacts located between Sediment Trap No.1 and No.2) potentially contain contaminants of concern (PCBs) that could pose an unacceptable risk. Therefore, interim measures will be conducted to remove PCB contamination.

2. Identify the goal of the study

The goal of the study is to confirm that the interim measures were successful in meeting the 1 mg/kg cleanup goal using field test kits and offsite laboratory confirmation results.

3. Identify information inputs

Information inputs include field test kit results and laboratory results generated during this project.

4. Define the boundaries of the study

Figures 2-5 and 2-6 of the IMWP illustrate the proposed excavation areas and exact sampling locations will be based on field conditions and final excavation area footprints.

5. Develop the analytic approach

a. If the field test kit results are below 1 mg/kg, then that sample will be sent to the offsite laboratory for total PCB analysis for confirmation. If the test kit results are above, then the individual aliquots making up the composite will also be field screened using the tests kits to try and identify the hot spot. The Navy will be then presented with the results from these composite sample and individual aliquots to determine if over-excavation of the hot spots and resampling is required.

b. If the offsite laboratory results are below 1 mg/kg for total PCBs, then no further action will be required for that excavation area and the area may be backfilled. If the results are above, then TtEC will await direction from the Navy since any additional excavation beyond the scope will not be performed without Navy concurrence.

6. Specify performance or acceptance criteria

Sampling personnel will review this SAP prior to collection of samples and sign off on SAP Worksheet #4. Sampling and analytical performance or acceptance criteria are specified in SAP

SAP Worksheet #11 – Project Quality Objectives/Systematic Planning Process Statements (Continued)

Worksheets #12, 15, and 28. Third-party data validation will be performed on samples as described in SAP Worksheets #29 and 36.

7. Develop the plan for obtaining data

Sampling design and rationale are discussed in SAP Worksheet #17.

SAP Worksheet #12 – Measurement Performance Criteria Table for Samples

QC Sample	Analytical Group	Frequency	Data Quality Indicators	Measurement Performance Criteria	QC Sample Assesses Error for Sampling (S), Analytical (A) or both (S&A)
Field Duplicates	PCBs	1 per 10 post-excavation confirmatory samples	Precision	Relative percent difference (RPD) $\leq$ 30% when detected concentrations >2x LOQ.	S
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	PCBs	1 per 20 post-excavation confirmatory samples	Precision/ Accuracy	See SAP Worksheet #28	S&A
Equipment Rinsate	PCBs	1 per day per or one per 20 samples, whichever is more frequent, per piece of reusable sampling equipment	Precision	Analytes detected below the limit of quantitation (LOQ)	S&A
Temperature blank	PCBs	1 per cooler	Precision	Cooler temperature 4 ± 2 degrees Celsius	S

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SAP Worksheet #13 – Secondary Data Criteria and Limitations Table

Secondary Data	Data Source	Data Generator(s)	How Data Will Be Used	Limitations on Data Use
Soil/sediment data	Tetra Tech, Inc. Interim Measures Report for SWMU 17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana. April 2014.	Navy	Data was used to determine sampling locations discussed in this SAP	None

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SAP Worksheet #14 – Summary of Project Tasks

PROJECT TASKS

A summary of activities performed by TtEC for this project include the following:

- Mobilization and site setup
- Clearing and grubbing
- Pre/post-excavation surveying and underground utility locating
- Excavation of soil, sediment, and/or bedrock within eight excavation areas
- Post-excavation confirmatory sampling
- Sediment management
- Sampling of the sediment staging area
- Waste characterization sampling and offsite transportation and disposal (T&D)
- Site restoration
- Operations and Maintenance of erosion and sediment control measures
- Demobilization
- Reporting

SAMPLE COLLECTION PROCEDURES

Prior to performing sampling in any of the excavation areas, the five (5) sample locations that will make up each composite sample will be randomly selected and marked. (Subsequently, each location will be surveyed using a handheld Global Positioning System unit.) Personnel will don a new pair of disposable nitrile gloves before collecting samples from those five (5) locations. Composite samples will be collected as follows:

1. The area to be sampled will be cleared of any surface debris or twigs.
2. A disposable or stainless-steel scoop (or equivalent) will be used to collect surface soil/sediment/bedrock and to transfer that material from the first of five (5) locations (that will comprise a composite sample) into a gallon size plastic ziplock bag. Half of the bag will be filled with material. A new plastic ziplock bag will be used for each of the four (4) remaining locations.
3. Each bag will be labeled with the sample ID, date, time, and number 1, 2, 3, 4, or 5 to indicate the aliquot number.
4. Half of the soil in each of the five (5) bags will then be transferred to stainless-steel bowl (or disposable bowl) and homogenized by using the scoop to mix the material. The remainder of the material in the bags will be set aside as these may be needed for individual field test kit analysis. (The plastic bags are being used as temporary storage for the soil until the field test kit is analyzed, which will be performed on the same day the samples

SAP Worksheet #14 – Summary of Project Tasks (Continued)

are collected in bags. If the field test kit analysis cannot be performed on the same day the soil is collected in bags, then the soil will be transferred to glass jars.)

5. Any debris or twigs will be removed from the bowl. All soil, sediment, or bedrock will remain in the pan.
6. The material in the pan will mixed with a scoop to homogenize the material. The homogenized material will be transferred to gallon size ziplock bag(s) and will be labeled with the sample ID and "COMP" for composite.
7. The field test kit will be ran using a sample of the material from the "COMP" bag(s). An aliquot of material in accordance with the field test kit instructions will be analyzed for PCBs.
8. When a sample is needed for the offsite laboratory analysis (as described in SAP Worksheet #17), the material in the "COMP" bag(s) will be used to transfer material into laboratory provided containers listed in SAP Worksheet #19. Personnel will used their gloved hand to pack the jars completely full with material to ensure no headspace.
9. Samples to be sent to offsite laboratory will then be labeled and packaged in accordance with SAP Worksheet #27. COCs for these samples will be filled out during sample collection as described in SAP Worksheet #27.
10. Any non-disposable sampling equipment such as stainless-steel scoops or stainless-steel bowls will be decontaminated prior to use at the next location as indicated in the next section.

DECONTAMINATION PROCEDURES

Decontamination of nondisposable sampling equipment will be performed to prevent the introduction of extraneous material into samples, and to prevent cross-contamination between samples. All sampling equipment will be decontaminated by washing with a nonphosphate detergent such as Liquinox™ (or equivalent) as follows:

1. Dilute the nonphosphate detergent with potable water in a bucket (or equivalent) as directed by the manufacturer. Wash the equipment with the nonphosphate detergent and potable water solution.
2. Use a second bucket with potable water to rinse the equipment.
3. Use a third bucket with potable water to rinse the equipment again.

An equipment rinsate sample will be collected using laboratory provided deionized water which will be poured over decontaminated sampling equipment (in this case a stainless steel scoop or bowl if used). That water will be captured into laboratory provided sample containers. The equipment rinsate will be analyzed for PCBs to determine if the decontamination procedure used for the hand auger was sufficient to remove any potential contamination.

SAP Worksheet #14 – Summary of Project Tasks (Continued)

Decontamination water will be drummed and personal protective equipment such as gloves, tyveks, and booties will be placed in plastic bags. All waste will be disposed of in accordance with the waste management plan (Appendix B of the IMWP).

DATA MANAGEMENT PROCEDURES

Field surveying data, logbooks, and COC records will be maintained in the TtEC project file. The field crews will send a copy of the COC records and any shipping information to the TtEC Project Chemist the day any samples are collected and submitted to the laboratory.

The laboratory will e-mail analytical results within the turnaround time to the TtEC Project Chemist. This submittal will include analytical results and basic QC results (method blanks, laboratory control sample [LCS], laboratory control sample duplicate [LCSD], MS/MSD, and laboratory duplicate as applicable). The TtEC Project Chemist will review prior to distribution to the project team. Following this submittal, the laboratory will submit deliverables as described in SAP Worksheet #29.

Confirmation sample analytical results will be validated by a third-party data validation company. The validation report is described in SAP Worksheet #29, and the validation qualifiers will be entered electronically in the laboratory electronic data deliverable (EDD) by the validator as described in SAP Worksheet #29.

Survey data will be recorded by on-site personnel for all samples locations. Horizontal control information will be captured in the State Plane Coordinate System in feet and vertical control standards will be in mean sea level. The survey data and associated analytical results will be submitted to the NIRIS website in NEDD format as applicable for this project.

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SAP Worksheet #15 – Reference Limits and Evaluation Table

Matrix: Soil/Sediment/Bedrock (confirmatory samples)
Analytical Group: PCBs

Analyte	CAS Number	Project Action Limit (µg/kg)	Project Action Limit Reference	Project Quantitation Limit Goal (µg/kg)	Laboratory-specific limits [b]		
					LOQ (µg/kg)	LOD (µg/kg)	DL (µg/kg)
Aroclor 1016	12674-11-2	1,000 for total PCBs; total PCBs calculated using only detected values for the individual aroclors	Cleanup goal [a]	33	33	15.0	5.09
Aroclor 1221	11104-28-2			47	47	17.0	15.6
Aroclor 1232	11141-16-5			33	33	15.0	5.12
Aroclor 1242	53469-21-9			33	33	33.0	9.12
Aroclor 1248	12672-29-6			33	33	20.0	5.61
Aroclor 1254	11097-69-1			33	33	17.0	5.52
Aroclor 1260	11096-82-5			33	33	7.70	2.65

Notes:

All results will be percent moisture (dry weight) corrected. Non-detected results will be reported by the laboratory with a “U” qualifier at the limit of detection (LOD). Results between the detection limit (DL) and LOQ will be reported as “J” flagged as estimated.

[a] The cleanup goal of 1 mg/kg is the Toxic Substances Control Act high occupancy limit which is a limit agreed to by the Navy, U.S. Fish and Wildlife Service, and EPA.

[b] The laboratory’s DLs, LODs, and LOQs are evaluated and reviewed quarterly and/or annually and therefore are subject to change. The laboratory will adhere to the most current limits when analyzing samples for this project.

SAP Worksheet #15 – Reference Limits and Evaluation Table (Continued)

Matrix: Water (equipment rinsate sample)
Analytical Group: PCBs

Analyte	CAS Number	Project Action Limit (µg/L)	Project Action Limit Reference	Project Quantitation Limit Goal (µg/L)	Laboratory-specific limits [a]		
					LOQ (µg/L)	LOD (µg/L)	DL (µg/L)
Aroclor 1016	12674-11-2	0.5	See footnote b.	1	1	0.600	0.170
Aroclor 1221	11104-28-2			1	1	0.256	0.180
Aroclor 1232	11141-16-5			1	1	0.304	0.130
Aroclor 1242	53469-21-9			1	1	0.304	0.104
Aroclor 1248	12672-29-6			1	1	0.600	0.170
Aroclor 1254	11097-69-1			1	1	0.256	0.140
Aroclor 1260	11096-82-5			1	1	0.304	0.0890

Notes:

Non-detected results will be reported by the laboratory with a "U" qualifier at the LOD. Results between the DL and LOQ will be reported as "J" flagged as estimated.

[a] The laboratory's DLs, LODs, and LOQs are evaluated and reviewed quarterly and/or annually and therefore are subject to change. The laboratory will adhere to the most current limits when analyzing samples for this project.

[b] TSCA unrestricted use decontamination standard for water.

SAP Worksheet #16 – Project Schedule/Timeline Table

Activity	Start Date	Duration (days)	Deliverable	Deliverable Due Date
Preparing IMWP including SAP	12/7/2015	10	Internal Draft IMWP/SAP	12/18/2015
Incorporating Navy comments	2/14/2016	10	Draft IMWP/SAP	3/1/2016
Regulatory review of SAP	3/8/2016	45	Draft Final IMWP/SAP	4/18/2015
Incorporating regulator comments	4/19/2015	5	Final IMWP/SAP	4/26/2015
Sampling effort described in this SAP	5/16/2015	40	None	None
Preparing report discussing data	Aug 2016	-	Report	Jan 2017

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SAP Worksheet #17 – Sampling Design and Rationale

Post-excavation composite confirmatory soil, sediment, or bedrock samples will be collected to verify attainment of the cleanup standard. With Navy COR concurrence to determine the need for additional excavation, the goal for each excavation area is to remove media until total PCB concentrations are less than or equal to 1 mg/kg in accordance with the TSCA High Occupancy Standard, 40 CFR 761.61. It is anticipated that post-excavation confirmation samples will be collected at a frequency of 1 sample per up to 100 linear ft area of sidewall and 1 sample per 1,200 square feet (sq ft) of area excavation floor. Each sample will be collected as a composite sample that will consist of an aliquot of material collected from five (5) random locations in the sidewall linear ft area which will represent the entire sample area. The same will be performed for each floor sq ft area.

Prior to sending the composite confirmatory samples to the lab, TtEC will use Envirogard® or equivalent immunoassay field test kits with a detection limit of 0.5 mg/kg PCBs, to screen soil, sediment and rock fragment composite samples on-site for PCBs during excavation activities at Excavation Areas 1 through 8 prior to submittal of samples for offsite laboratory analysis. These test kits will allow quick identification of hot spots. For non-TSCA excavation areas, it is anticipated that post-excavation confirmation samples will be collected at a frequency of 1 sample per up to 100 linear ft area of sidewall and 1 sample per 1,200 sq ft of area excavation floor. Please note, for TSCA excavation areas, a sidewall sample will be collected from each sidewall that is less than 100 linear ft, in addition to 1 sample per 1,200 sq ft of area excavation floor. Test kit results will be evaluated as follows:

1. If the immunoassay field kit PCB test results are below 1 mg/kg PCBs, then TtEC will send that composite sample, as a post-excavation confirmatory sample, to the offsite laboratory for total PCB analysis. If the laboratory results are below 1 mg/kg, then the excavation in that sidewall or excavation floor is considered complete. Once all the sidewall and excavation floor post-excavation confirmatory sample lab results for an Excavation Area are below 1 mg/kg, then subsequent surveying activities and backfilling will proceed in that Excavation Area.
2. If either laboratory results for a post-excavation confirmatory sample or the immunoassay test kit results of a composite sample are above the 1 mg/kg PCB criteria, then individual aliquots from the field locations, previously marked by flags, will be field screened using the immunoassay tests kits to identify the sample location or locations that contain PCB impacts above 1 mg/kg. If the field screen of individual aliquots fails to identify the area(s) above 1 mg/kg, then those individual aliquots may be sent to the laboratory for analysis to confirm if an area(s) is above 1 mg/kg. All laboratory results will be considered definitive data for making final decisions for the site.
3. If PCB impacts extend beyond the Excavation Areas defined for this project, the Navy COR will be contacted to determine if additional excavation is warranted. Further excavation will commence only at the direction of the Navy COR.
4. The above procedures will be repeated until the composite immunoassay and confirmatory laboratory sample results for all sidewall and excavation floors areas in each Excavation Area are below 1 mg/kg.

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

Details on each area that will be excavated and the associated sampling is described in the sections below. The number of samples for each area may vary based on final linear ft or sq ft areas that are excavated.

FLOODPLAIN

TtEC prepared a separate SAP outlining the sampling of this area that was submitted to the Navy for review in November 2015. The results of this investigation are discussed in the IMWP.

As indicated on Figure 2-1 of the IMWP, four (4) (Areas 9.1, 9.2, 9.4, and 9.6) of the six (6) excavation areas (Areas 9.1 through 9.6) had PCB concentrations between 1 mg/kg and 50 mg/kg and were identified as requiring non-TSCA, non-hazardous waste soil removal and disposal. The two remaining areas (Areas 9.3 and 9.5) had PCB concentrations above 50 mg/kg and were identified as requiring soil removal and disposal as TSCA hazardous waste.

EXCAVATION AREA #1: SOIL/SEDIMENT EXCAVATION SURROUNDING CONCRETE PIPE AT TOP OF DITCH 3

In Excavation Area #1, shown in Figure 2-5 of the IMWP, sampling conducted during and after completion of Phase 2 of the 2013/2014 IM confirmed that PCB impacted soils are present above, below, and adjacent to the concrete pipe at the headwaters of Ditch 3. In this area, TtEC will excavate soil/ sediment to a width of six (6) ft on either side of the 18 ft length of concrete pipe. Soil below the pipe will be excavated down to the bedrock interface, which is at approximately 11 ft bgs. Sidewalls will be cut back as appropriate to allow for safe working conditions. TtEC will also remove and replace the existing 18 ft length of concrete pipe and associated sediment. The void space in the pipe is 57 cubic feet (cu ft) and has an outside diameter of 2.5 ft. The pipe will be replaced with the same dimension and will be made of similar material. The six (6) ft length of pipe extending to the outfall will be reused, if possible. If there are visual indications of contamination on the exterior of the pipe it will not be re-used. The estimated amount of combined soil, sediment, and concrete sewer pipe to be removed in Excavation Area #1 around the outfall pipe is 156 tons.

Additionally, TtEC will remove sediment from the end of the concrete outfall pipe to a distance of 10 ft downgradient of the outfall pipe in the direction of Ditch 3. The area will be excavated to the bedrock interface (estimated at two (2) ft bgs) and will be 8.5 ft wide. Underground electrical utilities in this area may prohibit excavation to bedrock. Underground utility obstructions will be marked in the field prior to any intrusive work. The estimated amount of sediment to be removed in Excavation Area # 1 downgradient of the outfall pipe is an additional 10 tons.

Following excavation activities, it is anticipated that (4) sidewall samples and two (2) excavation floor samples will be collected from this area. Excavated soil and demolition debris associated with the outfall are, expected to be TSCA-level waste (greater than or equal to 50 mg/kg total PCBs) and non-TSCA level waste (greater than one (1) mg/kg and less than 50 mg/kg total PCBs), and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

EXCAVATION AREA #2: BEDROCK EXCAVATION UNDERNEATH CONCRETE PIPE AT TOP OF DITCH 3

In Excavation Area #2, depicted in Figure 2-5 of the IMWP, previous investigations confirmed that PCBs have penetrated into the shallow bedrock (a few inches below the bedrock surface) and for a horizontal distance of 10 ft downstream from the end of the concrete outfall pipe. In this area, that is 8.5 ft wide by 28 ft long, TtEC will excavate bedrock to a depth one (1) ft. The width of the excavation will be centered on the pipe's longitudinal center so that three (3) ft of bedrock on either side of the pipe (2.5 ft outside diameter) will be removed. The total width of the excavation will be 8.5 ft (3 ft. side bedrock + 3 ft side soil + 2.5 ft pipe = 8 ft wide). The total length of the excavation, 28 ft, extends under the entire 18 ft length of concrete outfall pipe to be removed, at the top of Ditch 3, to an additional 10 ft downstream from the end of the outfall pipe. A medium to large sized excavator, equipped with an appropriately sized hydraulic hammer attachment, will be used to excavate bedrock. Any residual soil remaining on the bedrock will be removed by craft labor and with shovels. The estimated amount of combined bedrock and soil to be removed from in Excavation Area # 2 is 14 tons.

Following excavation activities, it is anticipated that four (4) sidewall samples and one (1) excavation floor sample will be collected from this area. Excavated soil and rock from this area are expected to be TSCA and non-TSCA level waste and will be transported to the sediment handling pad prior to off-site disposal. Excavated bedrock will not require amendment prior to disposal.

EXCAVATION AREA #3: DITCH 3 SEDIMENT EXCAVATION FROM 10 FT DOWNSTREAM OF OUTFALL TO SEDIMENT TRAP NO. 1

In Excavation Area # 3, shown in Figure 2-5 of the IMWP, elevated concentrations of PCBs were detected in sediment beginning 10 ft. downstream of the outfall to Sediment Trap No.1. TtEC will excavate sediment in a path that is eight (8) ft. wide and one (1) ft. deep (or shallower if bedrock is encountered at a shallower depth), beginning 10 ft. downstream of the outfall pipe and extending to Sediment Trap No. 1. Sediment Trap No. 1 is located approximately 70 ft. downstream of the concrete outfall pipe. The estimated amount of sediment to be removed in Excavation Area #3 is 27 tons.

Following excavation activities, it is anticipated that six (6) sidewall samples and one (1) excavation floor sample will be collected from this area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Excavated materials from this area are expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA #4A AND 4B: EXCAVATION OF RETAINED SEDIMENT WITHIN SEDIMENT TRAPS NO.1 AND NO.2

In Excavation Areas #4A and #4B, TtEC will excavate all accumulated sediment on the upstream side of previously installed Sediment Traps No.1 (Area 4A, Figure 2-5 of the IMWP) and No.2 (Excavation Area 4B, Figure 2-6 of the IMWP). Due to the upstream nature of PCB impacts in

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

Ditch 3 it is assumed that sediments retained by these traps are also impacted. TtEC will excavate accumulated sediment to approximately one (1) ft deeper than the Ditch 3 stream bed. The amount and extent of sediment to be removed from these areas is contingent upon sediment accumulation at the time of excavation efforts. The excavation limits will be determined in the field based off of the amount of retained sediment at the time of excavation. However, it is not anticipated that sediment will be retained beyond 10 ft upstream of the traps. The estimated amount of sediment to be removed in Excavation Areas #4A and #4B is 6 tons.

Following excavation activities, it is anticipated that one (1) sidewall sample and one (1) excavation floor sample will be collected from each area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Excavated materials from this area are expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA #5: DITCH 3 SEDIMENT EXCAVATION BETWEEN SEDIMENT TRAP NO.1 AND NO.2

In Excavation Area #5, depicted in Figure 2-6 of the IMWP, elevated concentrations of PCBs within Ditch 3 have been identified since previous excavation activities. Potential downstream migration of PCB impacts within Ditch 3 also have been demonstrated based on the results of previous sampling efforts. In Excavation Area #5, TtEC will excavate all of the sediment in Ditch 3 (from surface to bedrock) for the entire stream width from the downstream edge of Sediment Trap No. 1 to Sediment Trap No. 2. Stream Segment 6 has an average channel width of approximately six (6) ft and Segment 5 has an average channel width of approximately 11 ft (overall average estimated width = 8 ft). Sediment depths in this portion of Ditch 3 recently were measured to range from be four (4) to eight (8) in. (overall average estimated depth = 5 in.). The distance between Sediment Trap No.1 and Sediment Trap No.2 is estimated to be 650 ft long. The estimated total amount of sediment to be removed in Excavation Area #5 is 120 tons.

Following excavation activities, it is anticipated that 48 sidewall samples and four (4) excavation floor samples will be collected from this area. In the event the excavation floor is bedrock, the floor sample will consist of bedrock scrapings. Although the actual extent of TSCA level sediments will be determined in the field, it is estimated that approximately 220 ft of excavated sediment from 10 ft upstream of sample 17SD151 to 10 ft downstream of sample 17SD150 is expected to be TSCA-level waste and will be transported to the sediment handling pad for amendment prior to off-site disposal. The total estimated amount of TSCA level sediment to be removed from Excavation Area #5 is 40 tons. The remaining removed sediment is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal. The total estimated amount of non-TSCA level sediment to be removed = 80 tons.

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

EXCAVATION AREA #6: BEDROCK EXCAVATION BETWEEN SEDIMENT SAMPLES 17SD150 AND 17SD151

In Excavation Area #6, investigations conducted during the 2015 PCB delineation sampling efforts confirmed the presence of PCB impacts within bedrock between samples 17SD150 and 17SD151 (Tetra Tech 2016). The locations of these bedrock samples are shown in Figure 2-6 of the IMWP. In this area, TtEC will excavate bedrock to a depth of two (2) ft below the bedrock surface. The length of the excavation, expected to be approximately 190 ft, will span from 10 ft upstream of sample 17SD151 to 10 ft downstream of sample 17SD150. The average excavation width, of approximately six (6) ft, is the average stream width. The estimated amount of bedrock to be removed in Excavation Area #6 is 147 tons.

Following excavation activities, it is anticipated that 14 sidewall samples and two (2) excavation floor sample will be collected from this area. Excavated materials from this area are expected to be TSCA level waste and will be transported to the sediment handling pad, if required, prior to off-site disposal. Excavated bedrock will not require amendment prior to disposal.

EXCAVATION AREA #7: RESIDUAL HOTSPOT EXCAVATION

In Excavation Area #7, a small area with PCB impacts that was not excavated during the previous remedial effort is the area surrounding sample location 17SB075 (Tetra Tech, 2014), as shown on Figure 2-6 of the IMWP. Soil in this area was excavated and backfilled to approximately one (1) ft bgs; however, PCB contamination still remains present at the one (1) to 1.5 ft bgs interval (Tetra Tech 2016). The location of this sample is shown on Figure 2-6 of the IMWP. TtEC will excavate a 10 ft radius cylindrical volume to 2.0 ft bgs centered on the sample 17SB075. The estimated total amount of soil to be removed in Excavation Area #7 is 35 tons.

Following excavation activities, it is anticipated that one (1) sidewall sample and one (1) excavation floor sample will be collected from this area. Excavated materials from this area are expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA #8: EXCAVATION OF FORMER OIL AND WATER SEPARATOR (OWS) AREA

As detailed in the 2016 Draft Final Technical Memorandum, the 12 in. thick concrete slab that supported the former OWS was uncovered during trenching activities. Some black staining within the soil and gravel layer below the concrete slab was observed. Soil samples collected from the stained soil within the trench had PCB concentrations ranging between 0.015 to 2.3 mg/kg (Tetra Tech 2016). In the former OWS area, TtEC will remove soil and gravel from an area of approximately 70 sq ft to a depth of seven (7) ft bgs. Excavation Area #8 is shown on Figure 2-5 of the IMWP. The estimated total amount of soil to be removed in Excavation Area #8 is 27 tons.

Following excavation activities, it is anticipated that one (1) sidewall sample and one (1) excavation floor sample will be collected from this area. Excavated materials from this area are

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.1: FLOODPLAIN SAMPLING AREA NORTH OF DITCH 3

Excavation Area # 9.1 is located within the floodplain area, north of Ditch #3 and east of the oxbow in Ditch #3, as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.650 to 1.810 mg/kg. TtEC will remove soil from an area of approximately 706 sq ft to a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.1 is 98 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described above. It is anticipated that two (2) sidewall samples along the 104 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.2: FLOODPLAIN SAMPLING AREA EAST OF DITCH 3 OXBOW

Excavation Area # 9.2 is located within the floodplain area, east of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.0078 to 1.650 mg/kg. TtEC will remove soil from an area of approximately 335 sq ft to a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.2 is 46 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described above. It is anticipated that one (1) sidewall sample along the 90 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.3: FLOODPLAIN SAMPLING AREA EAST OF DITCH 3 OXBOW

Excavation Area # 9.3 is located within the floodplain area, east of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.423 to 55.60 mg/kg. TtEC will remove soil from an area of approximately 697 sq ft to bedrock, estimated at a depth of 2.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.3 is 65 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described in above. It is anticipated that two (2) sidewall samples along the 108 ft perimeter and

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.4: FLOODPLAIN SAMPLING AREA SOUTH OF DITCH 3 OXBOW

Excavation Area # 9.4 is located within the floodplain area, south of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.00863 to 2.0 mg/kg. TtEC will remove soil from an area of approximately 288 sq ft to a depth of one (1) ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.4 is 11 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described above. It is anticipated that one (1) sidewall sample along the 85 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.5: FLOODPLAIN SAMPLING AREA NORTH OF DITCH 3 OXBOW

Excavation Area # 9.5 is located within the floodplain area, north of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.423 to 55.60 mg/kg. TtEC will remove soil from an area of approximately 714 sq ft to bedrock, estimated at a depth of one (1) ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.5 is 26 tons.

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described above. It is anticipated that two (2) sidewall samples along the 107 ft perimeter and one (1) excavation floor sample will be collected from this area. Excavated material from this area is expected to be TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

EXCAVATION AREA # 9.6: FLOODPLAIN SAMPLING AREA, NORTH OF DITCH 3 OXBOW

Excavation Area # 9.6 is located within the floodplain area, north of the oxbow curve of Ditch #3 as shown on Figure 2-1 and Figure 2-6 of the IMWP. As indicated in Figure 2-1 of the IMWP, soil samples collected had PCB concentrations ranging between 0.579 to 8.560 mg/kg. TtEC will remove soil from an area of approximately 1496 sq ft to a depth of 1.5 ft bgs. The estimated total amount of soil to be removed in Excavation Area # 9.6 is 83 tons.

SAP Worksheet #17 – Sampling Design and Rationale (Continued)

Following removal and field kit screening activities, TtEC will collect post-excavation composite confirmatory scrape samples from sidewalls and excavation floors using methodologies as described above.2. It is anticipated that two (2) sidewall samples along the 162 ft perimeter and two (2) excavation floor samples will be collected from this area. Excavated material from this area is expected to be non-TSCA level waste and will be transported to the sediment handling pad for amendment, if required, prior to off-site disposal.

STAGING AREAS

A sediment handling pad will be constructed to dewater excavated sediments. The sediment handling pad will be constructed to accommodate excavated sediments and loading equipment, as necessary. TtEC will collect one composite soil sample (consisting of 5 random locations) underneath the footprint of the sediment handling pad and decontamination pad prior to installation to establish pre-existing PCB concentrations in the underlying soil. Following excavation efforts, TtEC will again collect one composite soil sample (consisting of 5 random locations) of the underlying soils to confirm the lining systems did not fail.

BACKFILL MATERIAL

Sampling requirements and evaluation criteria for soil or sediment backfill material have not yet been established with the Navy. Once sampling frequency, analyses, and evaluation criteria have been established, that information will be incorporated in this SAP.

WASTE CHARACTERIZATION

Appendix C of the IMWP details sampling and analysis required for sampling of wastes for this project and is not discussed in this SAP.

SAP Worksheet #18 – Sampling Locations and Methods/SOP Requirements Table

Sampling Location/ ID Number	Matrix	Depth	Analytical Group	Number of Samples	Sampling SOP Reference
FLOODPLAIN FP-BB-CC • where FP = floodplain • BB = SW for sidewall and FL for floor • CC = sequential number starting with 01	Soil/ Sediment/ Bedrock	See SAP Worksheet #17	PCBs	See SAP Worksheet #17	See SAP Worksheet #14
EXCAVATION AREAS EX1-SW-01 EX1-SW-02 EX1-SW-03 EX1-SW-04 EX1-FL-01 EX1-FL-02 EX2-SW-01 EX2-SW-02 EX2-SW-03 EX2-SW-04 EX2-FL-01 EX3-SW-01 EX3-SW-02 EX3-SW-03 EX3-SW-04 EX3-SW-05 EX3-SW-06 EX3-FL-01 EX4A-SW-01 EX4A-FL-01 EX4B-SW-01 EX4B-FL-01 EX5-SW-01 thru EX5-SW-48 EX5-FL-01 EX5-FL-02 EX5-FL-03 EX5-FL-04 EX6-SW-01 thru EX6-SW-14 EX6-FL-01 EX6-FL-02 EX7-SW-01 EX7-FL-01 EX8-SW-01 EX8-FL-01 EX9-1-SW-01, EX9-1-SW-02, EX9-1-FL-01 EX9-2-SW-01, EX9-2-FL-01 EX9-3-SW-01, EX9-3-SW-02, EX9-3-FL-01 EX9-4-SW-01, EX9-4-FL-01 EX9-5-SW-01, EX9-5-SW-02, EX9-5-FL-01 EX9-6-SW-01, EX9-6-SW-02, EX9-6-FL-01, EX9-6-FL-01	Soil/ Sediment/ Bedrock	See SAP Worksheet #17	PCBs	See SAP Worksheet #17	See SAP Worksheet #14
STAGING AREA PREPAD-01 POSTPAD-01					

SAP Worksheet #18 – Sampling Locations and Methods/SOP Requirements Table (Continued)

Notes:

If samples are collected after over-excavation activities, the sample ID will have an "A" to represent the sample collected after over-excavation of that area. Field duplicate samples will be identified with a D prior to the sequential number such as EX7-FL-D01.

The sample collection date will be recorded on the COC and field logbook as indicated in SAP Worksheets #27 and 29.

SAP Worksheet #19 – Analytical SOP Requirements Table

Matrix	Analytical Group	Analytical and Preparation Method/SOP Reference	Containers	Sample Volume	Preservation Requirements (chemical, temperature, light protected)	Maximum Holding Time (preparation/ analysis)
Soil/Sediment/ Bedrock	PCBs	EPA 3546/8082A DV-OP-0015/DV-GC-0021	One 8 ounce glass jar (for PCBs) and one 4 ounce glass jar (for percent moisture)	30 grams	Cool all samples to ≤6°C, but not frozen per EPA	1 year to extract/40 days to analyze
Water (equipment rinsate)	PCBs	EPA 3510C/8082A DV-OP-0006/DV-GC-0021	Two 250 milliliter glass ambers (for low volume extraction method)	250 milliliter	Cool all samples to ≤6°C, but not frozen per EPA	1 year to extract/40 days to analyze

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SAP Worksheet #20 – Field Quality Control Sample Summary Table

Matrix	Analytical Group	No. of Sampling Locations	No. of Field Duplicates	No. of MS/MSDs	No. of Source Blanks	No. of Equipment Rinsates	No. of VOA Trip Blanks	Total No. of Samples to Lab
Soil/Sediment/ Bedrock	PCBs	112 [a]	12 [a]	6 [a]	0	0 [b]	Not applicable	130 [a]

Notes:

[a] This number may change depending upon floodplain confirmatory sampling, final excavation limits for each area, and any over-excavation activities.

[b] Disposable sampling equipment is anticipated to be used for this project, therefore equipment rinsates are not required. If non-disposable equipment is used, equipment rinsates will be collected according to SAP Worksheet #12. Also, if an equipment rinsate is required, the laboratory will provide certification that the water provided to collect an equipment rinsate is below the LOQs for PCBs; therefore, a source blank is not required.

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SAP Worksheet #21 – Project Sampling SOP References Table

This worksheet is not applicable to this project as described in SAP Worksheet #2.

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SAP Worksheet #22 – Field Equipment Calibration, Maintenance, Testing, and Inspection Table

This worksheet is not applicable to this project as described in SAP Worksheet #2.

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SAP Worksheet #23 – Analytical SOP References Table

Lab SOP Number [a]	Title, Revision Date, and/or Number	Definitive or Screening Data	Matrix and Analytical Group	Instrument	Organization Performing Analysis	Modified for Project Work? (Y/N)
DV-GC-0021	Polychlorinated Biphenyls (PCBs) by GC/ECD (SW846 Method 8082 and 8082A), Revision 10, 4/30/2015.	Definitive	Soil/Sediment/Bedrock/ Water PCBs	Gas Chromatograph/ Electron Capture Detector (GC/ECD)	TestAmerica Denver	N

Note:

[a] Analytical SOP revision number and date listed are current as of the date this SAP was published. The laboratory's SOPs are evaluated and reviewed annually and therefore are subject to change. The laboratory will adhere to the most current SOP when analyzing samples for this project.

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SAP Worksheet #24 – Analytical Instrument Calibration Table

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference
GC/ECD (PCBs)	An initial calibration (ICAL) using a minimum of 5 levels will be performed for all the aroclors.	Instrument receipt, major instrument change, when CCV does not meet criteria	Acceptance criteria options: • Option 1: RSD for each analyte ≤ 20%; • Option 2: linear least squares regression: r ≥ 0.99; • Option 3: non-linear regression: coefficient of determination $r^2 \geq 0.99$	Evaluate standards, chromatography, and detector response. If problem found with above, correct as appropriate, then repeat initial calibration An initial calibration using a minimum of 5 levels will be performed using Aroclors 1016 and 1260. Single point calibrations will be performed for the remaining Aroclors.	TestAmerica Denver Analyst	DV-GC-0021
GC/ECD (PCBs)	Initial calibration verification	Second source standard, immediately following ICAL	All project analytes within ± 20% of the expected value from the ICAL	Evaluate data. If problem (e.g., concentrated standard, plugged injector needle) found, correct, then repeat second source verification. If still fails, repeat initial calibration.	TestAmerica Denver Analyst	DV-GC-0021
GC/ECD (PCBs)	Continuing calibration verification (CCV)	Prior to sample analysis, after every 10 field samples, and at the end of the sequence.	All project analytes within ± 20% of the expected value from the ICAL	Immediately analyze two additional consecutive CCVs. If both pass, samples may be reported without reanalysis. If either fails, take corrective action(s) and re-calibrate; then reanalyze once all affected samples since the last acceptable CCV. If CCV still fails, consult client before reporting.	TestAmerica Denver Analyst	DV-GC-0021

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SAP Worksheet #25 – Analytical Instrument and Equipment Maintenance, Testing, and Inspection Table

Instrument Equipment	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference
GC/ECD (PCBs)	Change septum, clean injection port, change or clip column, install new liner, replace column, filters and seals	Detector signals and chromatogram review	Instrument performance and sensitivity	As needed	CCV passes criteria	Re-inspect injector port, cut additional column, reanalyze CCV, recalibrate instrument	TestAmerica Denver Analyst	DV-GC-0021

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SAP Worksheet #26 – Sample Handling System

Sample Handling System

SAMPLE COLLECTION, PACKAGING, AND SHIPMENT
Sample Collection (Personnel/Organization): Sampler/TtEC
Sample Packaging (Personnel/Organization): Sampler/TtEC
Coordination of Shipment (Personnel/Organization): Sampler/TtEC
Type of Shipment/Carrier: FedEx
SAMPLE RECEIPT AND ANALYSIS
Sample Receipt (Personnel/Organization): Sample Custodian/TestAmerica Denver
Sample Custody and Storage (Personnel/Organization): Sample Custodian/ TestAmerica Denver
Sample Preparation (Personnel/Organization): Sample preparation personnel/ TestAmerica Denver
Sample Determinative Analysis (Personnel/Organization): Analyst/ TestAmerica Denver
SAMPLE ARCHIVING
Field Sample Storage (No. of days from sample collection): 90 calendar days
Sample Extract/Digestate Storage (No. of days from extraction/digestion): 30 calendar days
Biological Sample Storage (No. of days from sample collection): Not applicable to this project
SAMPLE DISPOSAL/ARCHIVE
Personnel/Organization: Sample Custodian/ TestAmerica Denver
Number of Days from Analysis: 90 calendar days from sample receipt

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SAP Worksheet #27 – Sample Custody Requirements Table

An overriding consideration for data resulting from laboratory analyses is the ability to demonstrate that the data are legally defensible, i.e., that the samples were obtained from the locations stated and that they reached the laboratory without alteration. To accomplish this, evidence of collection, shipment, laboratory receipt, and laboratory custody until disposal will be documented through the COC record. A sample is considered to be in custody if the following conditions have been observed:

- In actual possession or in view of the person who collected the samples
- Locked in a secure area
- Placed in an area restricted to authorized personnel

The COC record lists each sample and the individuals performing the sample collection, shipment, and receipt. Any unused lines on the COC will be crossed out with a diagonal line, and initialed and dated by the person signing or creating the COC. The COC record will be the controlling document to ensure that the sample custody is maintained. Each time the sample custody is transferred, the former custodian will sign the COC on the _Relinquished By_ line, and the new custodian will sign the COC on the _Received By_ line. The date, time, and project or company affiliation will accompany each signature. When FedEx is used to ship samples to the laboratory, the carrier name (i.e., FedEx) will be recorded on the COC. The shipping container will be secured with two custody seals, thereby allowing for custody to be maintained by the shipping personnel until receipt by the laboratory.

Sample custody will be the responsibility of sampling personnel from the time of sample collection until the samples are accepted by the laboratory. Thereafter, the laboratory performing the analysis will maintain custody. The sample custodian will sign the COC, inventory each shipment, and note any discrepancies on the sample login form. The laboratory will immediately notify the TtEC Project Chemist of any discrepancies. The laboratory will have a system for tracking samples consistent with the Quality Systems Manual (QSM) (Department of Defense [DoD] 2013). The laboratory will dispose of samples.

In addition to providing a custody exchange record for the samples, the COC record serves as a formal request for sample analyses. The COC records will be completed, signed, and distributed as follows:

- The original copy sent to the laboratory along with the samples
- A copy retained on-site for inclusion in the project files
- A copy e-mailed to the TtEC Project Chemist on a daily basis to allow tracking of samples sent to laboratories to confirm laboratory receipt of samples along with the FedEx shipping number

SAMPLE NUMBERING

The sample number will be recorded in the field logbook, on the labels, and on the COC record at the time of sample collection. A complete description of the sample and sampling conditions will

SAP Worksheet #27 – Sample Custody Requirements Table (Continued)

be recorded in the field logbook and referenced using the unique sample identification number. Samples will be uniquely designated using a numbering system that is presented in SAP Worksheet #18.

SAMPLE PACKAGING

For samples submitted to the laboratory, immediately after sample labeling, containers will be placed in double-resealable plastic bags to protect the samples from moisture. Glass containers will be wrapped in bubble wrap after placing in double resealable bags to protect from breakage.

Samples to be sent to the laboratory will be packaged in coolers. Each cooler will be shipped with a temperature blank. (A temperature blank is a laboratory-provided container filled with tap water and stored in the cooler during sample collection and transportation.) The temperature of the cooler will be recorded by the laboratory on the COC record immediately upon receipt of the samples by using the temperature blank.

Samples to be shipped by FedEx will be packed in a sample cooler lined with a plastic bag, and the cooler drain spouts will be taped from the inside and outside of the cooler to prevent any leakage. Double-bagged wet ice (not blue ice) will be added inside the plastic bag at the bottom of the cooler, one layer of sample containers will be placed on the ice, and more double-bagged ice will be placed on top of the containers. This will be repeated until the cooler is filled with ice as the top layer in the cooler.

The COC record will include the FedEx air bill number, and the "Received By" box will be labeled with "FedEx". The COC record will be sealed in a double-resealable bag and then taped to the inside of the sample cooler lid. The cooler will be taped shut with strapping tape. Two custody seals will be taped across the cooler lid: one seal in the front and one seal in the back. Clear tape will be applied to the custody seals to prevent accidental breakage during shipment. The pouch for the FedEx air bill will be placed on the cooler and secured with clear tape. The FedEx air bill will be completed for priority overnight delivery and placed in the pouch. If multiple coolers are being shipped, the original FedEx air bill will be placed on the cooler with the COC record, and copies of the FedEx air bill will be placed on the other coolers. The number of packages should be included on each FedEx air bill (1 of 2, 2 of 2). Saturday deliveries, if required, should be coordinated with the laboratory in advance, and field sampling personnel must ensure that Saturday delivery stickers are placed on each cooler by FedEx. "Dangerous goods" declarations will also be completed as applicable.

SAP Worksheet #28 – Laboratory QC Samples Table

Matrix: Soil/Sediment/Bedrock
Analytical Group: PCBs
Analytical Method/SOP Reference: EPA 8082A/DV-GC-0021

QC Sample	Frequency/ Number	Method/SOP QC Acceptance Limits	Corrective Action	Person(s) Responsible for Corrective Action	Data Quality Indicator	Measurement Performance Criteria
Method Blank	1 per preparatory batch (defined as ≤ 20 samples)	No Target Compounds> ½ LOQ and > 1/10 the amount in any sample or 1/10 the regulatory limit (whichever is greater).	If sufficient sample is available, reanalyze samples. Qualify data as needed. Report results if sample results >10x blank result or sample results non-detect.	TestAmerica Denver Analyst	Accuracy	No Target Compounds> ½ LOQ and > 1/10 the amount in any sample or 1/10 the regulatory limit (whichever is greater).
LCS and/or LCSD	1 per preparatory batch (defined as ≤ 20 samples)	Aroclor 1016: 47–134% Aroclor 1254: 67–135% Aroclor 1260: 53–140% RPD ≤ 30% If the analyte(s) are not listed, use in-house LCS limits if project limits are not specified.	Reanalyze LCS once. If acceptable, report. Otherwise, evaluate and reprep and reanalyze the LCS and all samples in the associated prep batch for failed analytes, if sufficient sample material is available. If insufficient sample, then apply Q-flag to specific analyte(s) in all samples in the associated prep batch. Flagging is only appropriate when samples cannot be reanalyzed.	TestAmerica Denver Analyst	Accuracy	Aroclor 1016: 47–134% Aroclor 1254: 67–135% Aroclor 1260: 53–140% RPD ≤ 30% If the analyte(s) are not listed, use in-house LCS limits if project limits are not specified.

SAP Worksheet #28 – Laboratory QC Samples Table (Continued)

QC Sample	Frequency/ Number	Method/SOP QC Acceptance Limits	Corrective Action	Person(s) Responsible for Corrective Action	Data Quality Indicator	Measurement Performance Criteria
MS/MSD	1 per preparatory batch (defined as ≤ 20 samples)	Aroclor 1016: 47–134% Aroclor 1254: 67–135% Aroclor 1260: 53–140% RPD ≤ 30% If the analyte(s) are not listed, use in-house MS/MSD limits if project limits are not specified.	For specific analyte(s) in parent sample, apply J-flag if acceptance criteria are not met. Explain in the case narrative. The MS is for matrix evaluation only. If MS falls outside LCS limits, evaluate data to determine the source of the difference and to determine if there is a matrix effect or analytical error.	TestAmerica Denver Analyst	Accuracy/ Precision	Aroclor 1016: 47–134% Aroclor 1254: 67–135% Aroclor 1260: 53–140% RPD ≤ 30% If the analyte(s) are not listed, use in-house MS/MSD limits if project limits are not specified.
Surrogate	Per sample, blank, LCS, LCSD, MS, MSD	Tetrachloro-m-xylene: 44–130% Decachlorobiphenyl: 59–130% (in-house limit)	Evaluate data, if obvious chromatographic interference is present, report with narrative comment. If preparation problem noted, reextract and reanalyze. Apply Q-flag to all associated analytes if acceptance criteria are not met. Explain in the case narrative.	TestAmerica Denver Analyst	Accuracy	Tetrachloro-m-xylene: 44–130% Decachlorobiphenyl: 59–130% (in-house limit)

Note:

The laboratory’s in-house limits are evaluated and reviewed quarterly and/or annually and therefore are subject to change. The laboratory will adhere to the most current limits when analyzing samples for this project.

SAP Worksheet #29 – Project Documents and Records Table

Document	Where Maintained
Field logbook	TtEC project file
Sample Labels	TestAmerica Denver
COC	TtEC project file; TestAmerica Denver
Shipping records	TtEC project file
Field surveillance reports	TtEC project file
FCRs	TtEC project file
Laboratory documentation	TtEC project file; TestAmerica Denver
Data validation report	TtEC project file; LDC

Field documentation associated with sampling activities includes field logbooks, sample labels, COCs, sample shipping records, field surveillance reports, and FCR forms. In addition, laboratory documentation and data validation reports will be generated during this project. These types are described in the following sections.

FIELD LOGBOOK

A permanently bound field logbook with consecutively numbered pages will be assigned to this project. The logbooks will be numbered sequentially on the cover by the Project Quality Control Manager (PQCM) and that number will be entered into a logsheet maintained by the PQCM. All entries will be recorded in indelible black or blue ink. At the end of each work day, the logbook pages will be signed by the responsible sampler, and any unused portions of the logbook pages will be crossed out, signed, and dated. If it is necessary to transfer the logbook to another person, the person relinquishing the logbook will sign and date the last page used, and the person receiving the logbook will sign and date the next page to be used. At a minimum, the logbook will contain the following information:

- Project name and site location
- Date and time
- Personnel in attendance
- General weather information
- Work performed
- Field observations
- Sampling performed, including specifics such as location, type of sample, type of analyses, and sample identification; sample description information such as the soil/sediment/bedrock description and any metal or other waste observed in the excavation

SAP Worksheet #29 – Project Documents and Records Table (Continued)

- Field test kit analyses performed
- Descriptions of deviations from this SAP
- Problems encountered and corrective action taken
- Identification of field QC samples
- QC activities
- Verbal or written instructions
- Any other events that may affect the samples

SAMPLE LABELS

Sample labels will be hand-written using indelible black or blue ink and affixed to each sample container at the time of sample collection (or labels may be computer generated). The label will contain the following information:

- Sample identification number
- Sample collection date (month/day/year)
- Time of collection (24-hour clock) from the start of sampling
- Sampler's initials
- Preservative (if any)

CHAIN-OF-CUSTODY

COC information is described in SAP Worksheet #27.

SAMPLE SHIPPING RECORDS

Samples will be shipped via FedEx as described in SAP Worksheet #27.

FIELD SURVEILLANCE REPORTS

Field surveillances will be performed in accordance with the three phases of inspection as required by the QC Program. A Preparatory Inspection will be performed by the PQCM prior to the first sampling activities. This will include a general orientation for health and safety. An Initial Inspection will be conducted at the beginning of field sampling activities for this project. Daily field inspections and subsequent surveillances will be performed at the discretion of the PQCM or the QCPM throughout the duration of the project. The PQCM will use the Initial Inspection Checklist during inspection.

FIELD CHANGE REQUEST

An FCR will be prepared by the TtEC Program Chemist, or a designee, if a change to the SAP occurs during sampling or analysis activities. These changes will be minor and not result in a

SAP Worksheet #29 – Project Documents and Records Table (Continued)

change in scope and/or DQOs for this project. Major changes to the work scope affecting the original DQOs may require preparation of a SAP Addendum.

LABORATORY DOCUMENTATION

Samples will be assigned into a sample delivery group (SDG) number for every batch of 20 samples or less based on as received on a daily basis by the laboratory. Initial laboratory analytical results that are e-mailed to the TtEC Project Chemist for review will include:

- Laboratory signed review page
- Copy of COC
- Sample receipt and login
- Sample results
- Batch QC results

The laboratory will then produce a final data package in portable document format (PDF) format which will be sent to the TtEC Project Chemist. The PDF package will resemble a Stage 4 data package as referenced in the QSM for Environmental Laboratories [DoD 2013]), will be page numbered, and contain the following information:

- Cover page (with laboratory name, address, phone number, contact person, and SDG number, as well as the project name and project number)
- Table of contents
- Case narrative including resolution of all corrective actions and nonconformance
- Sample management records, including a copy of the COC record, shipping documents as applicable, and laboratory sample receipt forms
- Cross-reference table for sample IDs versus laboratory IDs
- Analytical results and quality assurance/QC information as follows:
  - Sample results forms, including method blanks
  - Raw data for samples, QC, and calibration
  - Instrument preparation log, run log, quantitation reports, and chromatograms/spectra
  - Sample preparation log
  - Standards traceability

All relevant laboratory raw data and documentation including, but not limited to, logbook, data sheets, electronic files, and reports, will be maintained by the laboratory for at least 5 years.

An EDD will be submitted to the TtEC Project Chemist. Both the EDDs and the PDF data package will present results to at least two significant figures.

SAP Worksheet #29 – Project Documents and Records Table (Continued)

When revisions to data packages are required, the revised pages will be stamped with the notation "amended or revised report" and have the same page numbering system as the original pages. If the revisions affect the EDDs, the revised EDD will then be sent along with the revised PDF pages to the TtEC Project Chemist.

DATA VALIDATION REPORTS

Third-party data validation will be performed using Automated Data Review (ADR) software as applicable. The third-party data validation report will include the data validation findings worksheets. Each laboratory SDG will have its own data validation report. The validation reports will contain the following information:

- Title page that contains project name, sample collection date, validator subcontractor name, report date, type of analysis, laboratory, SDG, sample identifications (including MS/MSD, duplicate, reanalysis, or dilution samples), sample matrix (e.g., soil, water), and validation level.
- Introduction page that includes the number of samples per matrix, analytical method reference, validation guideline reference, and section references to summary qualification flags, and denotes QC samples. Statements regarding flag classification (protocol/advisory) and whether raw data check was performed will also be included.
- Evaluation of the following parameters as applicable:
  - Technical holding times
  - Tune data
  - Calibration
  - Laboratory blanks
  - Accuracy and precision data for internal laboratory QC associated with each SDG
  - Target compound identification
  - System performance checks
  - Analyte quantitation
  - Field QC samples
  - Overall assessment of data
- Validation findings worksheets
- Qualifier classification

The data validator will submit a PDF copy of the report, and a validated ADR EDD to the TtEC Project Chemist. The data validation subcontractor will maintain validation records for at least 5 years.

SAP Worksheet #30 – Analytical Services Table

Matrix	Analytical Group	Sampling Locations/ ID Number	Analytical Method	Data Package Turnaround Time	Laboratory/ Organization (contact information)	Backup Laboratory/ Organization (contact information)
Soil/Sediment/ Bedrock/Water	All	All	All	5 business days	TestAmerica Denver Contact: Ms. Jamie Ide 4955 Yarrow Street Arvada, CO 80002 (303) 736-0126	TestAmerica St. Louis Contact: Erika Gish 13715 Rider Trail North Earth City, MO 63045 (314) 298-8566

TestAmerica Denver has been selected to analyze samples for this project. The laboratory has successfully completed the DoD Environmental Laboratory Accreditation Program (ELAP) certification, as provided in Appendix A, for the matrices and methods listed in SAP Worksheet #23 and will maintain current status throughout the duration of this project. The laboratory is capable of providing the project QC and data deliverables required by this SAP and the QSM for Environmental Laboratories (DoD 2013). Currently, the Indiana Department of Environmental Management does not certify laboratories for the analysis of samples associated with SW-846 methods for RCRA sites.

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SAP Worksheet #31 – Planned Project Assessments Table

Assessment Type	Frequency	Internal or External	Organization Performing Assessment	Person(s) Responsible for Performing Assessment (Title and Organizational Affiliation)	Person(s) Responsible for Responding to Assessment Findings (Title and Organizational Affiliation)	Person(s) Responsible for Identifying and Implementing Corrective Actions (Title and Organizational Affiliation)	Person(s) Responsible for Monitoring Effectiveness of Corrective Actions (Title and Organizational Affiliation)
Field Sampling Surveillance	Once during the project duration	Internal	TtEC	PQCM, TtEC	PM, TtEC	PM, TtEC	PM, TtEC QCPM, TtEC
Management Review	Once during the project duration	Internal	TtEC	QCPM, TtEC	PM, TtEC	PM, TtEC	PM, TtEC QCPM, TtEC

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SAP Worksheet #32 – Assessment Findings and Corrective Action Responses

Assessment Type	Nature of Deficiencies Documentation	Individual(s) Notified of Findings (Title and Organizational Affiliation)	Time Frame of Notification	Nature of Corrective Action Response Documentation	Individual(s) Receiving Corrective Action Response (Title and Organizational Affiliation)	Time Frame for Response
Field Sampling Surveillance	Surveillance Report	PM, TtEC	7 days after completion of the inspection	Corrective Action Report	PM, TtEC QCPM, TtEC	5 days after notification
Management Review	Surveillance Report	PM, TtEC	7 days after completion of the inspection	Corrective Action Report	PM, TtEC QCPM, TtEC	14 days after notification

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SAP Worksheet #33 – QA Management Reports Table

Type of Report	Frequency (daily, weekly monthly, quarterly, annually, etc.)	Projected Delivery Date(s)	Person(s) Responsible for Report Preparation (Title and Organizational Affiliation)	Report Recipient(s) (Title and Organizational Affiliation)
Field Sampling Surveillance Report	Once during the project	Determined during the project	PQCM, TtEC	PM, TtEC QCPM, TtEC
Management Review Report	Once after management review is completed	Determined during the project	QCPM, TtEC	PM, TtEC Program Manager, TtEC

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SAP Worksheet #34 – Verification (Step I) Process Table

Verification Input	Description	Internal/ External	Responsible for Verification (Title and Organizational Affiliation)
Field logbook	Field logbooks will be reviewed daily and verified for information accuracy and completeness. The inspection will be documented in daily QC reports.	I	PQCM, TtEC
COC records	COC records will be reviewed daily upon their completion and verified for completeness.	I I	PQCM, TtEC Project Chemist, TtEC
Sample receipt	The Project Chemist will verify receipt of samples by the laboratory.	I	Project Chemist, TtEC
Sample logins	Sample login information will be reviewed and verified for accuracy and completeness in accordance with the requirements in this SAP.	E I	Laboratory PM, TestAmerica Denver Project Chemist, TtEC
Laboratory analytical results prior to release	Laboratory analytical results will be reviewed to verify that the requirements in this SAP have been met. Prior to release, results will be verified as follows:	E	Laboratory PM, TestAmerica Denver
	All analytical results (100 percent) comply with the method- and project-specific requirements and any deviations or failure to meet criteria is documented for the project file.	E	Analyst, TestAmerica Denver
	All manual entries (100 percent) are free of transcription errors and manual calculations are accurate; computer calculations are spot-checked to verify program validity; results reported are compliant with method- and project-specific QC requirements; raw data and supporting materials are complete; spectral assignments are confirmed; descriptions of deviations from method or project requirements are documented; significant figures and rounding have been appropriately used; reported values include dilution factors; and results are reasonable.	E	Peer Analyst, TestAmerica Denver
	Analytical results reported are compliant with method- and project-specific QC requirements; the reported information is complete; the information in the report narrative is complete and accurate; and results are reasonable.	E	Laboratory PM or Second Level Data Reviewer, TestAmerica Denver
	Analytical results reported are compliant with method- and project-specific QC; analytical methods are performed in compliance with approved SOPs. This review may be conducted after release of results since reviews are done monthly on 10 percent of all results produced by the laboratory for all projects.	E	Laboratory QC Manager, TestAmerica Denver

SAP Worksheet #34 – Verification (Step I) Process Table (Continued)

Verification Input	Description	Internal/ External	Responsible for Verification (Title and Organizational Affiliation)
Laboratory analytical results due at turnaround time listed on COC	Laboratory analytical results will be verified for having been obtained following the protocols in this SAP and being of sufficient quality to satisfy DQOs.	I	Project Chemist, TtEC
Laboratory data packages	Stage 4 data package as referenced in the QSM for Environmental Laboratories (DoD 2013) will be verified by the laboratory performing the work for completeness and technical accuracy prior to submittal in accordance with requirements described in SAP Worksheet #29.	E I	Laboratory PM, TestAmerica Denver Project Chemist, TtEC

Notes:

E – external

I – internal

Step I – Step 1 (Verification) is a completeness check that is performed before the data review process continues in order to determine whether the required information (complete data package) is available for further review.

SAP Worksheet #35 – Validation (Steps IIa and IIb) Process Table

Step IIa/IIb	Validation Input	Description	Responsible for Validation (Title and Organizational Affiliation)
IIa	Sample Collection	Ensure that the sampling procedures described in this SAP were used to collect samples and that any deviations to those procedures were documented in a FCR.	PQCM, TtEC
IIa	Sample Handling	Ensure that the procedures described in this SAP for sample handling, packaging, and transport to the laboratory were followed.	PQCM, TtEC Project Chemist, TtEC
IIa	Sample Documentation	Ensure that the COC procedures described in this SAP were followed for sample collection and that logbooks or field forms were completed as required.	PQCM, TtEC Project Chemist, TtEC
IIa	Analytical Procedures	Ensure that the analytical methods and deliverable requirements described in this SAP were followed including holding times, analyte lists, and QC criteria.	Laboratory PM, TestAmerica Denver Project Chemist, TtEC
IIa	Laboratory data reports	Data reports will be validated by the laboratory performing the work for technical accuracy and requirements listed in SAP Worksheet #29 prior to submittal.	Laboratory PM, TestAmerica Denver
IIb	Sampling Procedures	Review of sampling procedures to appropriately document if any deviations occurred and if corrective action is required.	PQCM, TtEC
IIb	Analytical Procedures	Review of analytical procedures to appropriately document if any deviations occurred and if corrective action is required.	Project Chemist, TtEC
IIb	Project quantitation limits goals and laboratory QC criteria	Ensure project quantitation limits and laboratory QC criteria were followed and any deviations documented.	Project Chemist, TtEC
IIb	Data review	Third-party data validation will be performed by LDC using ADR software. For this project, 90 percent of the data will require EPA Stage 2B Validation Electronic and Manual (S2BVEM) and 10 percent Stage 4 Validation Electronic and Manual (S4VEM). (See SAP Worksheet #36 for details.)	Data Validator PM, LDC

Notes:

Step IIa – Step IIa (validation) is a review that the data generated is in compliance with analytical methods, procedures, and contracts.

Step IIb – Step IIb (validation) is a comparison of generated data against measurement performance criteria in the SAP (both sampling and analytical).

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SAP Worksheet #36 – Analytical Data Validation (Steps IIa and IIb) Summary Table

Step IIa/IIb	Matrix	Analytical Group	Validation Criteria	Data Validator (Title and Organizational Affiliation)
IIa	All	All	In accordance with laboratory SOPs listed in SAP Worksheet #23	Laboratory PM, TestAmerica Denver
IIb	All	All	In accordance with DoD QSM and EPA National Functional Guidelines (see description below)	Third-party data validator, LDC

Notes:

Step IIa – Step IIa (validation) is a review that the data generated is in compliance with analytical methods, procedures, and contracts.

Step IIb – Step IIb (validation) is a comparison of generated data against measurement performance criteria in the SAP (both sampling and analytical).

The laboratory will be producing Stage 4 data package as referenced in the QSM for Environmental Laboratories (DoD 2013) for all samples they receive. Confirmation sample results will be sent for third-party data validation in accordance with Step IIb above.

Third-party data validation will be performed by LDC using ADR software. For this project, 90 percent of the data will require S2BVEM and 10 percent S4VEM. The 10 percent will be randomly chosen by the TtEC Project Chemist. S2BVEM includes the comparison of QC parameters to the appropriate criteria or limits. (QC parameters include holding times, tune, calibration, blanks, spikes, surrogates, and internal standards, as applicable.) S4VEM includes not only what is performed in a S2BVEM but also includes review of raw data and backup documentation (for calibrations, standards, analysis run logs, etc.). This information is used for checking calculations of quantified analytical results during a S4VEM. Details on S2BVEM and S4VEM are located in the EPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (EPA 2009).

The following documents will be used as guidance for validating analytical results: National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002 (EPA 2014); QSM (DoD 2013); and the QC criteria specified in this SAP.

Analytical results that have been validated may be qualified as protocol or advisory. Protocol violations are when the laboratory deviates from the referenced analytical methods or the project-specific quantitation limits, QC limits, or QC criteria. Advisory violations are when technical validation criteria have not been met. These qualifications will be noted in the validation reports.

Data validation reports will be provided by LDC in accordance with SAP Worksheet #27. In addition, LDC will provide a validated EDD which will be used to upload analytical data to NIRIS for this project.

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SAP Worksheet #37 – Usability Assessment

After the analytical results have been reviewed, verified, and validated in accordance with SAP Worksheets #34 through 36, a data quality assessment (DQA) report may be prepared to assess data quality and usability. The DQA will include review of the following:

- Sample collection and analytical methods to verify that these were performed as discussed in SAP Worksheets #14, 17, and 19
- DQOs to determine whether they have been achieved by the data collected
- Project-specific data quality indicators for precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) parameters as discussed below

Analytical DQOs as assessed through the PARCCS parameters (as defined in the QSM for Environmental Laboratories ([DoD 2013]) are as follows:

PRECISION

Precision is the degree to which a set of observations or measurements of the same property, obtained under similar conditions, conform to themselves. Precision is usually expressed as standard deviation, variance, percent difference, or range, in either absolute or relative terms. Precision data indicate how consistent and reproducible the field sampling or analytical procedures have been. As applicable, field duplicate, laboratory control sample duplicate (LCSD), and MSD samples will be used to assess field and analytical precision. The precision measurement will be determined using the RPD between the duplicate sample results as follows:

$$\text{RPD} = 100 \times 2 \times |(\text{result - duplicate result})|/(\text{result + duplicate result})$$

As applicable, the RPD limits for LCSD and MSD are presented in SAP Worksheet #28.

ACCURACY

Accuracy is the degree of agreement between an observed value (sample result) and an accepted reference value. Analytical accuracy is measured by comparing the percent recovery (%R) of analytes spiked into a sample against a control limit. Spiked samples include LCS/LCSD or MS/MSD and are analyzed for every batch of up to 20 samples to serve as a measure of analytical accuracy. Surrogate standards, as applicable, are added to all samples, blanks, LCS, LCSD, MS, or MSD and evaluate the method's accuracy and help to determine matrix interferences. %R is calculated as follows:

$$\%R = 100 \times (\text{spiked sample result - unspiked sample result})/\text{amount of spike added}$$

As applicable, the laboratory will review the spiked sample and surrogate recoveries for each analysis to ensure that the %R lies within the control limits listed in SAP Worksheet #28.

REPRESENTATIVENESS

Representativeness is a qualitative term that describes the extent to which a sampling design adequately reflects the environmental conditions of a site. It takes into consideration the magnitude

SAP Worksheet #37 – Usability Assessment (Continued)

of the site area represented by one sample and indicates the feasibility and reasonableness of that design rationale. Representativeness also reflects the ability of the sample team to collect samples and the ability of the laboratory personnel to analyze those samples so that the generated data accurately and precisely reflect site conditions. In other words, a discrete sample that is collected and then subsampled by the laboratory is representative when its measured contaminant concentration equates to the contaminant concentration of some predefined vertical and horizontal spatial area at the site. Field personnel will be responsible for ensuring that samples are representative of field conditions by collecting and handling samples according to the procedures in this SAP. The laboratory personnel will be responsible for analyzing samples in accordance with the criteria in this SAP. Errors in sample collection, packaging, preservation, COC procedures, or laboratory analysis may result in samples being judged non-representative and may form a basis for rejecting the data.

COMPLETENESS

Completeness is a measure of the amount of valid data collected using a measurement system. The completeness goal is to generate a sufficient amount of valid data to meet project needs. Completeness is calculated and reported for each method, matrix, and analyte combination. The number of valid results divided by the number of possible individual analyte results, expressed as a percentage, determines the completeness of the data set. For completeness requirements, valid results are all results not qualified with a rejected (R) flag. The requirement of completeness is 95 percent for samples and is determined using the following equation:

$$\% \text{ completeness} = 100 \times (\text{number of valid analyte results}/\text{number of possible results})$$

COMPARABILITY

Comparability is the degree to which different methods or data agree or can be represented as similar. It describes the confidence that two data sets can contribute to a common analysis and interpolation. The use of standardized field and analytical procedures ensures comparability of analytical results. Sample collection and handling procedures will adhere to EPA-approved protocols. Laboratory procedures will follow standard analytical protocols, use standard units and standardized report formats, follow the calculations as referenced in approved analytical methods, and use a standard statistical approach for QC measurements.

SENSITIVITY

Sensitivity is the ability of the method or instrument to detect the target analytes at the level of interest. The LOQ is the minimum concentration of an analyte that can be routinely identified and quantified above the DL by a laboratory. Sensitivity can be measured by calculating the percent recovery of the analytes at the LOQ. The project team should document the project-required LOQs for each matrix, analytical group, concentration level, and analyte.

REFERENCES

DoD (Department of Defense). 2013. Quality Systems Manual for Environmental Laboratories. Version 5.0. July.

EPA (U.S. Environmental Protection Agency). 2000. Letter from Mr. P. Ramanauskas to Mr. T. Brent approving the 1999 Risk Screening document with request for No Further Action at SWMU 17, September.

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———————. 2006b. Guidance on Systematic Planning using the Data Quality Objectives Process, EPA QA/G-4, QAMS. February.

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Tetra Tech, Inc. (Tetra Tech). 2013. Final Interim Measures Work Plan (IMWP) for SWMU 17, NSA Crane, Crane, Indiana. March 5.

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———————. 2016. Draft Final Technical Memorandum for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU-17 – PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana. January 13.

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ATTACHMENT 1

LABORATORY DOD ELAP ACCREDITATION

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Accredited Laboratory

A2LA has accredited

TESTAMERICA DENVER

Arvada, CO

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2005, the 2009 TNI Environmental Testing Laboratory Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 5.0 of the DoD Quality System Manual for Environmental Laboratories (QSM), accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

Presented this 14th day of December 2015.

Peter Mlnyer

President & CEO
For the Accreditation Council
Certificate Number 2907.01
Valid to October 31, 2017

For the tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

December 14, 2015

Margaret Sleevi
TestAmerica Denver
4955 Yarrow Street
Arvada CO 80002

Dear Ms. Sleevi:

Your laboratory has been approved for continued accreditation by the American Association for Laboratory Accreditation (A2LA) in the Environmental field of testing for the tests listed on the enclosed Scope of Accreditation. An A2LA Certificate numbered 2907.01 is enclosed and may be displayed in a prominent place in your facility. Your renewed Certificate and Scope of Accreditation have also been added to the searchable database of accredited laboratories contained on our website, www.A2LA.org.

Your laboratory is now accredited to ISO/IEC 17025:2005 through **October 31, 2017**, by virtue of the reassessment of your laboratory and an evaluation by the Accreditation Council of all activity related to this assessment and any recent proficiency testing results. One year prior to your accreditation expiration date, you must pay an annual review fee and submit updated information on your laboratory. This process will be initiated three months prior to the expected completion date to allow sufficient time for submittal of required information and fees. In addition, A2LA must be notified in writing within 30 days at any time that significant changes occur in your laboratory's location, ownership, management, authorized representative, primary contact or major facilities.

We hope that you have been enjoying the benefits of using your A2LA accreditation for promotional and advertising purposes. Such publicity strengthens our own public information program and leads to broader recognition and acceptance of A2LA accredited laboratories. A2LA has made the promotion of your A2LA Accreditation ***easy*** by providing you with helpful tips and advice in our '*A2LA Promotion of Accreditation Package*' brochure located on your CAB Portal. Please be sure to read this and also A2LA *R105 – Requirements When Making Reference to A2LA Accredited Status* to ensure you are maximizing the benefits of promoting your A2LA Accreditation. When promoting or providing proof of your accreditation, please use your Scope of Accreditation, as this document details the specific tests which are accredited. The certificate is to be used for display purposes only.

We are pleased that you have chosen to continue as an A2LA accredited laboratory.

Sincerely,

Peter S. Unger
President

Enclosures

Asst ID: 24277
Master Code: 131040
Cert No: Environmental (2907.01)

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TESTAMERICA DENVER
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Arvada, CO 80002
Margaret S. Sleevi Phone: 303-736-0100
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ENVIRONMENTAL

Valid To: October 31, 2017 Certificate Number: 2907.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2009 TNI Environmental Testing Laboratory Standard, the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 5.0 of the DoD Quality Systems Manual for Environmental Laboratories), and for the test methods applicable to the Wyoming Storage Tank Remediation Laboratory Accreditation Program, accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP/MS, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.- Electronic Probes (pH, O_2), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, Total Organic Carbon, Total Organic Halide

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Metals				
Aluminum	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Antimony	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Arsenic	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Barium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010 / 6020/6020A
Beryllium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Boron	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Cadmium	EPA 6010C	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Calcium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Chromium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Cobalt	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Copper	------------------	---------------------	EPA 6010B/6010C/ 6020 /6020A	EPA 6010B/6010C/ 6020/6020A
Iron	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Lead	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Lithium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Magnesium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Manganese	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Mercury	------------------	---------------------	EPA 7470A	EPA 7471A/7471B
Molybdenum	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Nickel	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Potassium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Selenium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Silica	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Silicon	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Silver	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Sodium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Strontium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Thallium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Tin	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Titanium	------------------	---------------------	EPA 6010B/6010C	EPA 6010B/6010C
Vanadium	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Zinc	------------------	---------------------	EPA 6010B/6010C/ 6020/6020A	EPA 6010B/6010C/ 6020/6020A
Nutrients				
Nitrate (as N)	------------------	By calculation	By calculation/EPA 9056/9056A/300.0	By calculation /EPA 9056/9056A
Nitrate-nitrite (as N)	------------------	EPA 353.2	EPA 353.2/9056/ 9056A/300.0	EPA 9056/9056A
Nitrite (as N)	------------------	SM 4500-NO2 B	SM 4500-NO2 B; EPA 9056/9056A/300.0	EPA 9056/9056A
Orthophosphate (as P)	------------------	---------------------	EPA 9056/9056A/ 300.0	EPA 9056/9056A
~~Total Phosphorus~~	------------------	---------------------	~~EPA 6010B/6010C~~	~~EPA 6010B/6010C~~
Demands	------------------			
Total Organic Carbon	------------------	---------------------	EPA 9060/9060A	EPA 9060/9060A
Total Organic Halides	------------------	---------------------	EPA 9020B	---------------------

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Wet Chemistry	------------------			----------------------
Alkalinity (Total Bicarbonate, Carbonate, and Hydroxide Alkalinty)	------------------	SM 2320 B_1997	SM 2320 B	SM 2320 B
Ammonia	------------------	EPA 350.1	EPA 350.1	----------------------
Biological Oxygen Demand	------------------	SM 5210B	SM 5210B	----------------------
Bromide	------------------	----------------------	EPA 9056/9056A/ 300.0	EPA 9056/9056A
Chloride	------------------	----------------------	EPA 9056/9056A/ 300.0	EPA 9056/9056A
Chemical Oxygen Demand	------------------	EPA 410.4	EPA 410.4	----------------------
Conductivity	------------------	----------------------	EPA 9050/9050A	EPA 9050/9050A
Cyanide	------------------	----------------------	9012A/9012B	9012A/9012B
Ferrous iron	------------------	SM 3500 Fe B, D	SM 3500 Fe B, D	----------------------
Fluoride	------------------	----------------------	EPA 9056/9056A 300.0	EPA 9056/9056A
Hexavalent chromium	EPA 7196A	----------------------	EPA 7196A	----------------------
pH	------------------	----------------------	EPA 9040B/9040C	EPA 9045C/9045D
Oil and Grease (HEM and SGT-HEM)	------------------	----------------------	EPA 1664A/1664B	9071B
Percent moisture	------------------	----------------------	----------------------	ASTM D2216
Perchlorate	------------------	----------------------	EPA 6860	EPA 6860
Phenols	------------------	----------------------	EPA 9066	
Solids, total	------------------	SM 2540 B	SM 2540 B	SM 2540 B
Solids, Total Suspended	------------------	SM 2540 D	SM 2540 D	SM 2540 D
Solids, Total Dissolved	------------------	SM 2540 C	SM 2540 C	SM 2540 C
Sulfate	------------------	----------------------	EPA 9056/9056A/ 300.0	EPA 9056/9056A
Sulfide, total	------------------	----------------------	EPA 9034	EPA 9034
Sulfide	------------------	----------------------	EPA 9030B	EPA 9030B
Total Kjeldahl Nitrogen	------------------	----------------------	EPA 351.2	----------------------
Purgeable Organics (volatiles)				----------------------
Acetone	------------------	----------------------	EPA 8260B	EPA 8260B
Acetonitrile	------------------	----------------------	EPA 8260B	EPA 8260B
Acrolein	------------------	----------------------	EPA 8260B	EPA 8260B
Acrylonitrile	------------------	----------------------	EPA 8260B	EPA 8260B
Allyl Chloride	------------------	----------------------	EPA 8260B	EPA 8260B
tert-Amyl Methyl Ether	EPA 8260B			
Benzene	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ	EPA 8260B/8021B/ AK101/OK DEQ
			GRO/8260B SIM	GRO
Bromobenzene	------------------	----------------------	EPA 8260B	EPA 8260B
Bromochloromethane	------------------	----------------------	EPA 8260B	EPA 8260B
Bromodichloromethane	------------------	----------------------	EPA 8260B	EPA 8260B
Bromoform	------------------	----------------------	EPA 8260B	EPA 8260B
Bromomethane	------------------	----------------------	EPA 8260B	EPA 8260B
2-Butanone	------------------	----------------------	EPA 8260B	EPA 8260B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
n-Butyl alcohol	------------------	----------------------	EPA 8260B/8015B/ 8015C	EPA 8260B/8015B/ 8015C
tert-Butyl alcohol (2-Methyl-2-propanol)	EPA 8260B		EPA 8260B/8260B SIM	EPA 8260B
n-Butylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
sec-Butylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
tert-Butylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
Carbon disulfide	------------------	----------------------	EPA 8260B	EPA 8260B
Carbon tetrachloride	------------------	----------------------	EPA 8260B	EPA 8260B
Chlorobenzene	------------------	----------------------	EPA 8260B/8021B	EPA 8260B/8021B
2-Chloro-1,3-butadiene	------------------	----------------------	EPA 8260B	EPA 8260B
Chloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
2-Chloroethyl vinyl ether	------------------	----------------------	EPA 8260B	EPA 8260B
Chloroform	------------------	----------------------	EPA 8260B	EPA 8260B
1-Chlorohexane	------------------	----------------------	EPA 8260B	EPA 8260B
Chloromethane	------------------	----------------------	EPA 8260B	EPA 8260B
Chloroprene	------------------	----------------------	EPA 8260B	EPA 8260B
4-Chlorotoluene	------------------	----------------------	EPA 8260B	EPA 8260B
2-Chlorotoluene	------------------	----------------------	EPA 8260B	EPA 8260B
Cyclohexane	------------------	----------------------	EPA 8260B	EPA 8260B
Cyclohexanone	------------------	----------------------	EPA 8260B	EPA 8260B
Dibromochloromethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	------------------		EPA 8260B/8011	EPA 8260B/8011
Dibromochloromethane	------------------	----------------------	EPA 8260B	EPA 8260B
Dichlorodifluoromethane	------------------	----------------------	EPA 8260B	EPA 8260B
Dibromomethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,2 Dibromoethane (EDB)	EPA 8011		EPA 8260B/8011	EPA 8260B/8011
1,2-Dichlorobenzene	------------------	----------------------	EPA 8260B/8021B	EPA 8260B/8021B
1,3-Dichlorobenzene	------------------	----------------------	EPA 8260B/8021B	EPA 8260B/8021B
1,4-Dichlorobenzene	------------------	----------------------	EPA 8260B/8021B	EPA 8260B/8021B
cis-1,4-Dichloro-2-butene	------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,4-Dichloro-2-butene	------------------	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloroethene	------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloroethene	------------------	----------------------	EPA 8260B	EPA 8260B
cis-1,2-Dichloroethene	------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,2-Dichloroethene	------------------	----------------------	EPA 8260B	EPA 8260B
Dichlorofluoromethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloropropane	------------------	----------------------	EPA 8260B	EPA 8260B
1,3-Dichloropropane	------------------	----------------------	EPA 8260B	EPA 8260B
2,2-Dichloropropane	------------------	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloropropene	------------------	----------------------	EPA 8260B	EPA 8260B
1,3-Dichloropropene	------------------	----------------------	EPA 8260B	EPA 8260B
cis-1,3-Dichloropropene	------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,3-Dichloropropene	------------------	----------------------	EPA 8260B	EPA 8260B
Diethyl ether	------------------	----------------------	EPA 8260B	EPA 8260B
Di-isopropylether	------------------	----------------------	EPA 8260B	EPA 8260B
1,4-Dioxane	------------------	----------------------	EPA 8260B/8260B SIM	EPA 8260B/8260B SIM

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Ethanol	------------------	----------------------	EPA 8260B/8015B/ 8015C	EPA 8260B/8015B/ 8015C
Ethyl acetate	------------------	----------------------	EPA 8260B	EPA 8260B
Ethyl benzene	EPA 8260B/8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ GRO	EPA 8260B/8021B/ AK101/OK DEQ GRO
Ethyl methacrylate	------------------	----------------------	EPA 8260B	EPA 8260B
Ethyl tert-butyl ether	EPA 8260B	----------------------	----------------------	----------------------
Ethylene glycol	------------------	----------------------	EPA 8015C	EPA 8015C
Gas Range Organics (GRO)	EPA 8015C	----------------------	EPA 8015B/8015C/ AK101/8015D/ OK DEQ GRO	EPA 8015B/8015C/ AK101/8015D/ OK DEQ GRO
Hexane	------------------	----------------------	EPA 8260B	EPA 8260B
2-Hexanone	------------------	----------------------	EPA 8260B	EPA 8260B
Hexachlorobutadiene	------------------	----------------------	EPA 8260B	EPA 8260B
Isobutyl alcohol (2-Methyl-1-propanol)	------------------	----------------------	EPA 8260B/8015B/ 8015C	EPA 8260B/8015B/ 8015C
Isopropyl alcohol	------------------	----------------------	EPA 8260B	EPA 8260B
Isopropylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,4-Isopropyltoluene	------------------	----------------------	EPA 8260B	EPA 8260B
Iodomethane	------------------	----------------------	EPA 8260B	EPA 8260B
Methacrylonitrile	------------------	----------------------	EPA 8260B	EPA 8260B
Methanol	------------------	----------------------	EPA 8015B/8015C	EPA 8015B/8015C
Methyl acetate	------------------	----------------------	EPA 8260B	EPA 8260B
Methyl cyclohexane	------------------	----------------------	EPA 8260B	EPA 8260B
Methylene chloride	------------------	----------------------	EPA 8260B	EPA 8260B
Methyl ethyl ketone (MEK)	------------------	----------------------	EPA 8260B	EPA 8260B
Methyl isobutyl ketone	------------------	----------------------	EPA 8260B	EPA 8260B
Methyl methacrylate	------------------	----------------------	EPA 8260B	EPA 8260B
Methyl tert-butyl ether (MtBE)	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ OK DEQ GRO	EPA 8260B/8021B/ OK DEQ GRO
4-Methyl-2-pentanone	------------------	----------------------	EPA 8260B	EPA 8260B
Naphthalene	EPA 8260B/ 8021B	----------------------	EPA 8260B/OK DEQ GRO	EPA 8260B/OK DEQ GRO
2-Nitropropane	------------------	----------------------	EPA 8260B	EPA 8260B
2,2' Oxybisethanol	------------------	----------------------	EPA 8015C	EPA 8015C
2-Pentanone	------------------	----------------------	EPA 8260B	EPA 8260B
Propionitrile	------------------	----------------------	EPA 8260B	EPA 8260B
n-Propylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
Propylene glycol	------------------	----------------------	EPA 8015C	EPA 8015C
Styrene	------------------	----------------------	EPA 8260B	EPA 8260B
1,1,1,2-Tetrachloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,1,2,2-Tetrachloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
Tetrachloroethene	------------------	----------------------	EPA 8260B	EPA 8260B
Tetrahydrofuran	------------------	----------------------	EPA 8260B	EPA 8260B
Toluene	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ GRO	EPA 8260B/8021B/ AK101/OK DEQ GRO
Total Petroleum Hydrocarbons (TPH)	------------------	EPA 1664A/ 1664B	EPA 1664A/1664B	----------------------

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
1,2,3-Trichlorobenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,1,1-Trichloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,1,2-Trichloroethane	------------------	----------------------	EPA 8260B	EPA 8260B
Trichloroethene	------------------	----------------------	EPA 8260B/8260B SIM	EPA 8260B
Trichlorofluoromethane	------------------	----------------------	EPA 8260B	EPA 8260B
1,2,3-Trichlorobenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,2,4-Trichlorobenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,2,3-Trichloropropane	------------------		EPA 8260B/8011	EPA 8260B/8011
1,1,2-Trichloro-1,2,2-trifluoroethane	------------------	----------------------	EPA 8260B	EPA 8260B
Triethylene glycol	------------------	----------------------	EPA 8015C	EPA 8015C
1,2,3-Trimethylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,2,4-Trimethylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
1,3,5-Trimethylbenzene	------------------	----------------------	EPA 8260B	EPA 8260B
Vinyl acetate	------------------	----------------------	EPA 8260B	EPA 8260B
Vinyl chloride	------------------	----------------------	EPA 8260B/8260B SIM	EPA 8260B
Xylenes, total	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ GRO	EPA 8260B/8021B/ AK101/OK DEQ GRO
1,2-Xylene	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ GRO	EPA 8260B/8021B/ AK101/OK DEQ GRO
M+P-Xylene	EPA 8260B/ 8021B	----------------------	EPA 8260B/8021B/ AK101/OK DEQ GRO	EPA 8260B/8021B/ AK101/ K DEQ GRO
Methane	------------------	----------------------	RSK-175	----------------------
Ethane	------------------	----------------------	RSK-175	----------------------
Ethylene (Ethene)	------------------	----------------------	RSK-175	----------------------
Acetylene	------------------	----------------------	RSK-175	----------------------
Acetylene ethane	------------------	----------------------	RSK-175	----------------------
Extractable Organics (semivolatiles)	------------------			
Acenaphthene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Acenaphthylene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Acetophenone	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Acetylaminofluorene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Alachlor	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
4-Aminobiphenyl	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Aniline	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Anthracene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Aramite	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Atrazine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Azobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Benzaldehyde	------------------	----------------------	EPA 8270C 8270D	EPA 8270C/8270D
Benzidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Benzoic acid	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Benzo (a) anthracene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Benzo (b) fluoranthene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Benzo (k) fluoranthene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Benzo (ghi) perylene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Benzo (a) pyrene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Benzyl alcohol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
bis (2-Chloroethoxy) methane	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
bis (2-Chloroethyl) ether	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
bis (2-Chloroisopropyl) ether (2,2'Oxybis(1-chloropropane)	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
bis (2-Ethylhexyl) phthalate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
4-Bromophenyl phenyl ether	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
butyl Benzyl phthalate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-sec-butyl-4,6-Dinitrophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Carbazole	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
4-Chloroanilene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Chlorobenzilate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
4-chloro-3-Methylphenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1-Chloronaphthalene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Chloronaphthalene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Chlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
4-Chlorophenyl phenyl ether	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Chrysene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Cresols	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Diallate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Dibenzo (a,h) anthracene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Dibenzofuran	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,2-Dichlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,3-Dichlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,4-Dichlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
3,3'-Dichlorobenzidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4-Dichlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,6-Dichlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Diethyl phthalate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Dimethoate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
3,3-Dimethylbenzidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
p-Dimethylaminoazobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
7,12-Dimethylbenz(a)anthracene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
alpha-,alpha-Dimethylphenethylamine	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4-Dimethylphenol	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Dimethyl phthalate	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
di-n-butyl Phthalate	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
di-n-octyl Phthalate	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,3-Dinitrobenzene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,4-Dinitrobenzene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4-Dinitrophenol	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4-Dinitrotoluene	------------------	---------------------	EPA 8270C/8270D	EPA 8270 C/8270D
2,6-Dinitrotoluene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,4-Dioxane	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Diphenylamine	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,2-Diphenylhydrazine	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Disulfoton	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Diesel Range Organics (DRO)	EPA 8015C (WY: C10-C32)	---------------------	EPA 8015B/8015C, AK102/8015D/OK DEQ DRO	EPA 8015B/8015C, AK102/8015D/OK DEQ DRO
ethyl Methanesulfonate	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Famphur	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Fluoroanthene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Fluorene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Hexachlorobenzene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Hexachlorobutadiene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Hexachlorocyclopentadiene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Hexachloroethane	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Hexachloropropene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Indeno (1,2,3-cd) pyrene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Isodrin	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Isophorone	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Isosafrole	------------------	---------------------	EPA 8270C/8270D	EPA 8270 C/8270D
Methapyrilene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
3-Methylcholanthrene	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-methyl-4,6-Dinitrophenol	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
methyl Methane sulfonate	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1-Methylnaphthalene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
2-Methylnaphthalene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
2-Methylphenol	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
3+4-Methylphenol	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
Naphthalene	------------------	---------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
1,4-Naphthoquinone	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
1-Naphthylamine	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Naphthylamine	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Nitroaniline	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D
3-Nitroaniline	------------------	---------------------	EPA 8270C/8270D	EPA 8270C/8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
4-Nitroaniline	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Nitrobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Nitrophenol	------------------	----------------------	EPA 8270C /8270D	EPA 8270C/8270D
4-Nitrophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Nitroquinoline-1-oxide	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosodiethylamine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosodimethylamine	------------------	----------------------	EPA 8270C/8270D/ 8270D SIM	EPA 8270C/8270D/ 8270D SIM
N-Nitrosodi-n-butylamine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosodi-n-propylamine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosodiphenylamine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosomethylethylamine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosomorpholine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosopiperidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
N-Nitrosopyrrolidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
5-nitro-o-Toluidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,2-oxybis(1-chloropropane)	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Parathion, methyl	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Parathion, ethyl	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pentachlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pentachloroethane	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pentachloronitobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pentachlorophenol	------------------	----------------------	EPA 8270C/8270D/ 8321A/8321B	EPA 8270C/8270D/ 8321A/8321B
Phenacetin	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Phenanthrene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Phenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Phorate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2-Picoline	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pronamide	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Pyrene	------------------	----------------------	EPA 8270C/8270D/ 8270SIM	EPA 8270C/8270D/ 8270SIM
Pyridine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Safrole	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Sulfotepp	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,2,4,5-Tetrachlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,3,4,6-Tetrachlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Thionazin	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
o-Toluidine	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,2,4-Trichlorobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4,5-Trichlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
2,4,6-Trichlorophenol	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
o,o,o-triethyl Phosphorothioate	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
1,3,5-Trinitrobenzene	------------------	----------------------	EPA 8270C/8270D	EPA 8270C/8270D
Motor Oil (Residual Range Organics)	------------------	----------------------	EPA 8015B/8015C/ 8015D, AK103/OK DEQ RRO	EPA 8015B/ 8015C/ 8015D, AK103/ OK DEQ RRO

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Pesticides/Herbicides/PCBs				
Aldrin	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Atrazine	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Azinophos ethyl	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Azinophos methyl	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
alpha-BHC	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
beta-BHC	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
delta-BHC	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
gamma-BHC	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Bolstar	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
alpha-Chlordane	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
gamma-Chlordane	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Chlordane (technical)	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Chloropyrifos	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Coumaphos	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
2,4-D	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A
Dalapon	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A
2,4-DB	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A
4,4'-DDD	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
4,4'-DDE	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
4,4'-DDT	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Demeton-O	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Demeton-S	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Demeton, total	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Diazinon	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Dicamba	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A
Dichlorovos	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Dichloroprop	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A
Dieldrin	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Dimethoate	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Dinoseb	------------------	----------------------	EPA 8151A/8321A	EPA 8321A
Disulfoton	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Endosulfan I	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Endosulfan II	------------------	----------------------	EPA 8081A /8081B	EPA 8081A/8081B
Endonsulfan sulfate	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Endrin	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Endrin aldehyde	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Endrin ketone	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
EPN	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Ethoprop	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Ethyl Parathion	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Famphur	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Fensulfothion	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Fenthion	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
Heptachlor	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Heptachlor epoxide	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Hexachlorobenzene	------------------	----------------------	EPA 8081A/8081B	EPA 8081A/8081B
Malathion	------------------	----------------------	EPA 8141A/8141B	EPA 8141A/8141B
MCPA	------------------	----------------------	EPA 8151A/8321A	EPA 8151A/8321A

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
MCPP	------------------	----------------------	EPA 8151A /8321A	EPA 8151A/8321A
Merphos	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Methoxychlor	------------------	----------------------	EPA 8081A /8081B	EPA 8081A/8081B
Methyl parathion	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Mevinphos	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Naled	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
PCB-1016 (Arochlor)	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1221	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1232	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1242	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1248	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1254	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1260	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1262	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
PCB-1268	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
Total PCBs	------------------	----------------------	EPA 8082 /8082A	EPA 8082/8082A
Phorate	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Phosmet	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Propazine	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Ronnel	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Simazine	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Stirophos	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Sulfotepp	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
2,4,5-T	------------------	----------------------	EPA 8151A /8321A	EPA 8151A/8321A
Thionazin	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Tokuthion	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
2,4,5-TP	------------------	----------------------	EPA 8151A /8321A	EPA 8151A/8321A
Toxaphene	------------------	----------------------	EPA 8081A /8081B	EPA 8081A/8081B
Trichloronate	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
o,o,o-triethylphos Phorothioate	------------------	----------------------	EPA 8141A /8141B	EPA 8141A/8141B
Explosives				
1,3,5-Trinitrobenzene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
1,3-Dinitrobenzene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
2,4,6-Trinitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
3,5-Dinitroaniline	------------------	----------------------	EPA 8330B	EPA 8330B
2,4-Dinitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
2,6-Dinitroltoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
2-amino-4,6-Dinitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
2-Nitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
3-Nitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
4-amino-2,6-Dinitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
4-Nitrotoluene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Nitrobenzene	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Nitroglycerin	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
octahydro-1,3,5,7-tetrabitro-1,3,5,7-Tetrazocine (HMX)	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Pentaerythritoltetranitrate (PETN)	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Picric acid	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
RDX (hexahydro-1,3,5-trinitro-1,3,5-Triazine)	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Tetryl (methyl 2,4,6-Trinitrophenylnitramine	------------------	----------------------	EPA 8330A/8330B/ 8321A/8321B	EPA 8330A/8330B/ 8321A/8321B
Perfluorinated Hydrocarbons (PFCs) and Perfluorinated Sulfonates (PFSs)				
Perfluorobutanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoropentanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroheptanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorononanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroundecanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorododecanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotridecanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotetradecanoic acid	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorobutane sulfonate	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexane sulfonate	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane sulfonate	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecane sulfonate	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane sulfonamide	------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Hazardous Waste Characteristics				
Conductivity	------------------	----------------------	EPA 9050A	EPA 9050A
Corrosivity	------------------	----------------------	EPA 9040B/9040C	EPA 9045C/9045D
Ignitibility	------------------	EPA 1010/1010A	EPA 1010/1010A	EPA 1010/1010A
Paint filter liquids test	------------------	----------------------	EPA 9095A	EPA 9095A
Synthetic Precipitation Leaching Procedure (SPLP)	------------------	----------------------	EPA 1312	EPA 1312
Toxicity Characteristic Leaching Procedure	------------------	----------------------	EPA 1311	EPA 1311

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Organic Prep Methods				
Separatory funnel liquid-liquid extraction	------------------	---------------------	EPA 3510C	----------------------
Continuous liquid-liquid extraction	------------------	---------------------	EPA 3520C	----------------------
Soxhlet extraction	------------------	---------------------	----------------------	EPA 3540C
Microwave extraction	------------------	---------------------	----------------------	EPA 3546
Ultrasonic extraction	------------------	---------------------	----------------------	EPA 3550B/3550C
Waste dilution	------------------	---------------------	EPA 3580A	EPA 3580A
Solid phase extraction	------------------	---------------------	EPA 3535A	----------------------
Volatiles purge and trap	------------------	---------------------	EPA 5030B	EPA 5030A/5035A/ 5035
Organic Cleanup Procedures				
Florisil cleanup	------------------	---------------------	EPA 3620B	EPA 3620B
Florisil cleanup	------------------	---------------------	EPA 3620C	EPA 3620C
Sulfur cleanup			EPA 3660A	EPA 3660A
Sulfuric acid/Permanganate cleanup	------------------	---------------------	EPA 3665A	EPA 3665A
Metals Digestion				
Acid digestion total recoverable or dissolved metals	------------------	---------------------	EPA 3005A	----------------------
Acid digestion for total metals	----------------	---------------------	EPA 3010A	----------------------
Acid digestion for total metals	------------------	---------------------	EPA 3020A	----------------------
Acid digestion of sediments, sludges and soils	------------------	---------------------	----------------------	EPA 3050B

Joint ISO-ILAC-IAF Communiqué **8 January 2009**

ILAC members will be aware that many of their accredited laboratories have been experiencing difficulty convincing their customers they should be asking laboratories to be accredited to ISO/IEC 17025, (prior to 1999 ISO Guide 25) rather than be certified (registered) to ISO 9001. The situation became more acute with the publication of ISO 9001:2008, as some customers continually asked laboratories to be certified, when they really meant accredited. The confusion is caused by the perception that accredited laboratories do not operate a recognised quality management system.

To address this problem the ILAC Laboratory Committee asked that a statement be put on accreditation (attestation) certificates, issued by their accreditation body, stating that an accredited laboratory's management system meets the principles of ISO 9001:2008. The same statement could also be used by accredited laboratories on their calibration certificates and test reports.

Working through the ISO-ILAC-IAF Joint Working Group (JWG), ILAC is pleased to be able to advise it's member accreditation bodies that the problem raised by the Laboratory Committee may now be addressed as follows:-

On accreditation (attestation) certificates, accreditation bodies may add the following:

"This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated January 2009)"

Accreditation Bodies choosing to use the above statement on their accreditation certificates should either supply, or provide access to (via a website), the Joint ISO-ILAC-IAF Communiqué as part of the package. (It may be convenient for accreditation bodies to do this when they issue new accreditation certificates for ISO/IEC 17025:2005 to their accredited laboratories.)

Accredited laboratories choosing to use the above statement on their test reports and calibration certificates should also either supply, or provide access to (via a website), the Joint ISO-ILAC-IAF Communiqué as part of the package for their laboratory customers.

The Joint Communiqué is available on the ILAC website at www.ilac.org on the publications and resources page.

The ILAC Laboratory Committee thanks the members of the ILAC and IAF Executive Committees and the ISO-ILAC-IAF JWG, for developing a solution to a critical market issue facing some accredited laboratories.

Daniel Pierre, ILAC Chair

Secretariat: PO Box 7507, Silverwater, NSW 2128, Australia
7 Leeds Street, Rhodes, NSW 2138, Australia

Joint IAF-ILAC-ISO Communiqué
on the
Management Systems Requirements of ISO/IEC 17025:2005,
General requirements for the competence of testing and calibration laboratories

A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and **management system requirements** that are necessary for it to consistently deliver technically valid test results and calibrations. The **management system requirements** in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 **Quality Management Systems — Requirements** and are aligned with its pertinent requirements.

IAF Chair	**ILAC Chair**	**ISO Secretary General**

January 2009

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APPENDIX E

FLOODPLAIN SAMPLING LABORATORY ANALYTICAL REPORTS

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-81417-1
Client Project/Site: NSA Crane CTO WE38
Revision: 2

For:
Tetra Tech EC, Inc.
17885 Von Karman Ave
Suite 500
Irvine, California 92614

Attn: Sabina Sudoko

Authorized for release by:
4/18/2016 4:25:07 PM

Jamie Ide, Project Manager I
(303)736-0126
jamie.ide@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1 2 3 4 5 6 7 8 9 10 11 12 13

Table of Contents

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1 2 3 4 5 6 7 8 9 10 11 12 13

Job ID: 280-81417-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE
Client: Tetra Tech EC, Inc.
Project: NSA Crane CTO WE38
Report Number: 280-81417-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Samples were evaluated in accordance with DoD certification. The associated data has been flagged in accordance with DoD QSM 5.0.

Due to laboratory error at the time of SAP and project build, the associated data package does not match the Project Sampling Analysis Plan (SAP). The SAP indicates that Aroclor 1254 is included in the associated batch QC as a spiked analyte; however, the laboratory's standard spike includes Aroclor 1016 and Aroclor 1260 only. As such, the data and batch QC have been reported with Aroclor 1016 and Aroclor 1260.

RECEIPT

The samples were received on 4/1/2016 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 0.9º C, 1.9º C, 2.1º C, 3.2º C, 3.2º C and 5.6º C.

Due to the large quantity of samples received, approximately half the samples received (comprising pages 1 through 4 of 8 pages of the submitted chain of custody) will be found in this report. The on hold samples requested on the chain of custody, if activated by the client, will be reported under a separate cover (280-81417-2).

The second half of samples (pages 5 through 8 of 8 pages of the submitted chain of custody) will be reported under a separate cover (280-81423-1). The on hold samples requested on the chain of custody, if activated by the client, will be reported under a separate cover (280-81423-2).

POLYCHLORINATED BIPHENYLS (PCBS)

DCB Decachlorobiphenyl and/or Tetrachloro-m-xylene failed the surrogate recovery criteria low for FP-07-0-0.5 (280-81417-18), FP-09-0-0.5 (280-81417-20), FP-15-0-0.5 (280-81417-28) and FP-17-0-0.5 (280-81417-34). In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required. The surrogate recoveries are calculated from diluted samples and in some cases are diluted below reportable limits.

Samples FP-01-0-0.5 (280-81417-1)[4X], FP-07-0-0.5 (280-81417-18)[5X], FP-09-0-0.5 (280-81417-20)[40X], FP-11-0-0.5 (280-81417-22)[10X], FP-12-0-0.5 (280-81417-24)[4X], FP-13-0-0.5 (280-81417-26)[10X], FP-15-0-0.5 (280-81417-28)[20X], FP-16-0-0.5 (280-81417-32)[10X], FP-17-0-0.5 (280-81417-34)[400X], FP-19-0-0.5 (280-81417-38)[4X] and FP-21-0-0.5 (280-81417-43)[5X] required dilution prior to analysis due to an abundance of target analytes. The reporting limits have been adjusted accordingly.

The following samples underwent a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: FP-05-0-0.5 (280-81417-13), FP-10-0-0.5 (280-81417-15), FP-10-0-0.5-D (280-81417-16), FP-07-0-0.5 (280-81417-18), FP-09-0-0.5 (280-81417-20), FP-11-0-0.5 (280-81417-22), FP-11-0-0.5 (280-81417-22[MS]), FP-11-0-0.5 (280-81417-22[MSD]), FP-12-0-0.5 (280-81417-24), FP-13-0-0.5 (280-81417-26), FP-15-0-0.5 (280-81417-28), FP-14-0-0.5 (280-81417-30), FP-16-0-0.5 (280-81417-32), FP-16-0-0.5 (280-81417-32[MS]), FP-16-0-0.5 (280-81417-32[MSD]), FP-17-0-0.5 (280-81417-34), FP-18-0-0.5 (280-81417-36), FP-19-0-0.5 (280-81417-38), FP-20-0-0.5 (280-81417-40), FP-20-0-0.5-D (280-81417-42), FP-21-0-0.5 (280-81417-43), (LCS 280-319512/2-A), (MB 280-319512/1-A), FP-01-0-0.5 (280-81417-1), FP-03-0-0.5 (280-81417-3), FP-02-0-0.5 (280-81417-5), FP-02-0-0.5 (280-81417-5[MS]), FP-02-0-0.5 (280-81417-5[MSD]), FP-04-0-0.5 (280-81417-7), FP-06-0-0.5 (280-81417-9), FP-08-0-0.5 (280-81417-11), (LCS

Job ID: 280-81417-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

280-319319/2-A) and (MB 280-319319/1-A)..

The following samples could not be thoroughly homogenized prior to sub-sampling due to sample matrix: FP-04-0-0.5 (280-81417-7), FP-06-0-0.5 (280-81417-9), FP-08-0-0.5 (280-81417-11), FP-10-0-0.5 (280-81417-15), FP-10-0-0.5-D (280-81417-16), FP-12-0-0.5 (280-81417-24), FP-13-0-0.5 (280-81417-26), FP-14-0-0.5 (280-81417-30) and FP-18-0-0.5 (280-81417-36). It was noted that the samples were clay like in nature.

The MS/MSD performed on sample FP-11-0-0.5 (280-81417-22) exhibited spike recoveries outside QC control limits for Aroclor 1016 and Aroclor 1260. The associated LCS was in control and demonstrates that operating procedures were in control. No further action was required.

The MS/MSD performed on sample FP-16-0-0.5 (280-81417-32) exhibited spike recoveries outside QC control limits for Aroclor 1016 and Aroclor 1260. The associated LCS was in control and demonstrates that operating procedures were in control. No further action was required.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REVISION
The case narrative was revised to include indication of a discrepancy between the laboratory data package, and the project SAP.

REVISION 2
Formatter was incorrect in report revision; only the report format has been corrected. No changes have been made to the data report.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 9~~ 1 of 8
Company: Tetra Tech EC, Inc.		Analysis Requested		Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			Preservation Codes:
City: Irvine	TAT Requested (days): 10 Days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659.WE38			
Site: Crane, IN	SSOW#:			

280-81417 Chain of Custody

Preservation Codes:
A - HCL, M - Hexane
B - NaOH, N - None
C - Zn Acetate, O - AsNaO2
D - Nitric Acid, P - Na2O4S
E - NaHSO4, Q - Na2SO3
F - MeOH, R - Na2S2O3
G - Amchlor, S - H2SO4
H - Ascorbic Acid, T - TSP Dodecahydrate
I - Ice, U - Acetone
J - DI Water, V - MCAA
K - EDTA, W - ph 4-5
L - EDA, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-01-0-0.5	3/30/16	0900	G	SO			X	1	
FP-01-0.5-1	↓	0905	↓	↓			H	1	HOLD
FP-03-0-0.5		0920					X	1	
FP-03-1-1.5		0925					H	1	HOLD
FP-02-0-0.5		0930					X	3	Run MS/MSD
FP-02-1.5-2		0935					H	1	HOLD
FP-04-0-0.5		0940					X	1	
FP-04-1-1.5		0945					H	1	HOLD
FP-06-0-0.5		0950					X	1	
FP-06-1-1.5		0955					H	1	HOLD
FP-08-0-0.5		1005					X	1	

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Michael Hagan	3/31/16 1430		[illegible signature]	4/1/16 1020	TAD

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 5.8, 3.4, 3.4, 1.1, 2.1, 2.3-0.2 IR#7 Transferred by DW 4/1/16

Page 6 of 38

4/18/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information			
Client Contact: Sabina Sudoko	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):
Company: Tetra Tech EC, Inc.	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com	COC No: 280-51416-18646.1
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:		Page: ~~Page 1 of 0~~ 2 of 8
City: Irvine	TAT Requested (days): 10 Days		Job #:
State, Zip: CA, 92614	PO #: 1123578		
Phone: 949-809-5022	WO #:		
Email: sabina.sudoko@tetratech.com	Project #: 28014315 4659.WE38		
Project Name: NSA Crane - WE38	SSOW#:		
Site: Crane, IN			

Analysis Requested: Field Filtered Sample (Yes or No); Perform MS/MSD (Yes or No); 8082A - PCBs; Total Number of containers

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered	Perform MS/MSD	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-08-0.5-1	3/30/16	1010	G	SO			H	1	HOLD
FP-05-0-0.5	↓	1015	↓	↓			X	1	
FP-05-1.5-2	↓	1020	↓	↓			H	1	HOLD
FP-10-0-0.5	↓	1025	↓	↓			X	1	
FP-10-0-0.5-D	↓	1025	↓	↓			X	1	
FP-10-1.5-2	↓	1030	↓	↓			H	1	HOLD
FP-07-0-0.5	↓	1035	↓	↓			X	1	
FP-07-0.5-1	↓	1040	↓	↓			H	1	HOLD
FP-09-0-0.5	↓	1045	↓	↓			X	1	
FP-09-0.5-1	↓	1050	↓	↓			H	1	HOLD
FP-11-0-0.5	↓	1055	↓	↓			X	3	Run MS/MSD

Possible Hazard Identification
☑ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☑ *Disposal By Lab* ☑ *Archive For* 3 *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Michael Hagan	Date/Time: 3/31/16 1430	Company	Received by: [signature]	Date/Time: 4/1/16 1020	Company: CTO
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

13 12 11 10 9 8 7 6 5 4 3 2 1

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 8~~ 3 of 8
Company: Tetra Tech EC, Inc.		Analysis Requested		Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			
City: Irvine	TAT Requested (days): 10 days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659. WE38			
Site: Crane, IN	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-11-0.5-1	3/30/16	1100	G	SO			H	1	HOLD
FP-12-0-0.5	↓	1110	↓	↓			X	1	
FP-12-1-1.5		1115					H	1	HOLD
FP-13-0-0.5		1120					X	1	
FP-13-0.5-1		1125					H	1	HOLD
FP-15-0-0.5		1130					X	1	
FP-15-1.5-2		1135					H	1	HOLD
FP-14-0-0.5		1140					X	1	
FP-14-0.5-1		1145					H	1	HOLD
FP-16-0-0.5		1150					X	3	Run MS/MSD
FP-16-0.5-1	↓	1200	↓	↓			H	1	HOLD

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Michael Hagan	Date/Time: 3/31/16 1430	Company	Received by: [signature]	Date/Time: 4/1/16 1020	Company: TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5012	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 3~~ 4 of 8
Company: Tetra Tech EC, Inc.		**Analysis Requested**		Job #:
Address: 17885 Von Karman Ave Suite 500	**Due Date Requested:**			
City: Irvine	**TAT Requested (days):** 10 days			
State, Zip: CA, 92614				
Phone:	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659. WE38			
Site: Crane, IN	SSOW#:			

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				W		
FP-17-0-0.5	3/30/16	1205	G	SO			X	1	
FP-17-0.5-1		1210					H	1	HOLD
FP-18-0-0.5		1215					X	1	
FP-18-0.5-1		1220					H	1	HOLD
FP-19-0-0.5		1225					X	1	
FP-19-1.5-2		1230					H	1	HOLD
FP-20-0-0.5		1235					X	1	
FP-20-0.5-1		1240					H	1	HOLD
FP-20-0-0.5-D		1235					X	1	
FP-21-0-0.5		1300					X	1	
FP-21-1.5-2		1305					H	1	HOLD

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Michael Hagan	3/31/16 1430		[signature]	4/1/16 1020	TAD

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Method Summary

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

1 2 3 4 5 6 7 8 9 10 11 12 13

Sample Summary

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-81417-1	FP-01-0-0.5	Solid	03/30/16 09:00	04/01/16 10:20
280-81417-3	FP-03-0-0.5	Solid	03/30/16 09:20	04/01/16 10:20
280-81417-5	FP-02-0-0.5	Solid	03/30/16 09:30	04/01/16 10:20
280-81417-7	FP-04-0-0.5	Solid	03/30/16 09:40	04/01/16 10:20
280-81417-9	FP-06-0-0.5	Solid	03/30/16 09:50	04/01/16 10:20
280-81417-11	FP-08-0-0.5	Solid	03/30/16 10:05	04/01/16 10:20
280-81417-13	FP-05-0-0.5	Solid	03/30/16 10:15	04/01/16 10:20
280-81417-15	FP-10-0-0.5	Solid	03/30/16 10:25	04/01/16 10:20
280-81417-16	FP-10-0-0.5-D	Solid	03/30/16 10:25	04/01/16 10:20
280-81417-18	FP-07-0-0.5	Solid	03/30/16 10:35	04/01/16 10:20
280-81417-20	FP-09-0-0.5	Solid	03/30/16 10:45	04/01/16 10:20
280-81417-22	FP-11-0-0.5	Solid	03/30/16 10:55	04/01/16 10:20
280-81417-24	FP-12-0-0.5	Solid	03/30/16 11:10	04/01/16 10:20
280-81417-26	FP-13-0-0.5	Solid	03/30/16 11:20	04/01/16 10:20
280-81417-28	FP-15-0-0.5	Solid	03/30/16 11:30	04/01/16 10:20
280-81417-30	FP-14-0-0.5	Solid	03/30/16 11:40	04/01/16 10:20
280-81417-32	FP-16-0-0.5	Solid	03/30/16 11:50	04/01/16 10:20
280-81417-34	FP-17-0-0.5	Solid	03/30/16 12:05	04/01/16 10:20
280-81417-36	FP-18-0-0.5	Solid	03/30/16 12:15	04/01/16 10:20
280-81417-38	FP-19-0-0.5	Solid	03/30/16 12:25	04/01/16 10:20
280-81417-40	FP-20-0-0.5	Solid	03/30/16 12:35	04/01/16 10:20
280-81417-42	FP-20-0-0.5-D	Solid	03/30/16 12:35	04/01/16 10:20
280-81417-43	FP-21-0-0.5	Solid	03/30/16 13:00	04/01/16 10:20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: FP-01-0-0.5
Date Collected: 03/30/16 09:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-1
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	69.6	U	153	69.6	23.6	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1221	78.9	U	218	78.9	72.4	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1232	69.6	U	153	69.6	23.8	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1242	153	U	153	153	42.3	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1248	92.8	U	153	92.8	26.0	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1254	78.9	U	153	78.9	25.6	ug/Kg	☼	04/07/16 08:21	4
Aroclor 1260	**678**		153	35.7	12.3	ug/Kg	☼	04/07/16 08:21	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*	*D*	*59 - 130*	*04/04/16 15:05*	*04/07/16 08:21*	*4*
Tetrachloro-m-xylene	*80*	*D*	*44 - 130*	*04/04/16 15:05*	*04/07/16 08:21*	*4*

Client Sample ID: FP-03-0-0.5
Date Collected: 03/30/16 09:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-3
Matrix: Solid
Percent Solids: 82.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	17.3	U	38.0	17.3	5.86	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1221	19.6	U	54.1	19.6	18.0	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1232	17.3	U	38.0	17.3	5.90	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1242	38.0	U	38.0	38.0	10.5	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1248	23.0	U	38.0	23.0	6.46	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1254	19.6	U	38.0	19.6	6.36	ug/Kg	☼	04/06/16 16:13	1
Aroclor 1260	**251**		38.0	8.87	3.05	ug/Kg	☼	04/06/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*59 - 130*	*04/04/16 15:05*	*04/06/16 16:13*	*1*
Tetrachloro-m-xylene	*80*		*44 - 130*	*04/04/16 15:05*	*04/06/16 16:13*	*1*

Client Sample ID: FP-02-0-0.5
Date Collected: 03/30/16 09:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-5
Matrix: Solid
Percent Solids: 76.7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19.2	U	42.2	19.2	6.50	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1221	21.7	U	60.0	21.7	19.9	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1232	19.2	U	42.2	19.2	6.54	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1242	42.2	U	42.2	42.2	11.7	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1248	25.6	U	42.2	25.6	7.17	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1254	21.7	U	42.2	21.7	7.05	ug/Kg	☼	04/06/16 16:34	1
Aroclor 1260	**55.3**		42.2	9.84	3.39	ug/Kg	☼	04/06/16 16:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*59*		*59 - 130*	*04/04/16 15:05*	*04/06/16 16:34*	*1*
Tetrachloro-m-xylene	*79*		*44 - 130*	*04/04/16 15:05*	*04/06/16 16:34*	*1*

Client Sample ID: FP-04-0-0.5
Date Collected: 03/30/16 09:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-7
Matrix: Solid
Percent Solids: 78.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18.5	U	40.6	18.5	6.26	ug/Kg	☼	04/06/16 18:01	1
Aroclor 1221	20.9	U	57.8	20.9	19.2	ug/Kg	☼	04/06/16 18:01	1
Aroclor 1232	18.5	U	40.6	18.5	6.30	ug/Kg	☼	04/06/16 18:01	1

Client Sample Results

Client: Tetra Tech EC, Inc. TestAmerica Job ID: 280-81417-1
Project/Site: NSA Crane CTO WE38

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-04-0-0.5 **Lab Sample ID: 280-81417-7**
Date Collected: 03/30/16 09:40 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.4**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1242	40.6	U	40.6	40.6	11.2	ug/Kg	☼	04/06/16 18:01	1
Aroclor 1248	24.6	U	40.6	24.6	6.90	ug/Kg	☼	04/06/16 18:01	1
Aroclor 1254	20.9	U	40.6	20.9	6.79	ug/Kg	☼	04/06/16 18:01	1
Aroclor 1260	**33.4**	**J**	40.6	9.47	3.26	ug/Kg	☼	04/06/16 18:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*59 - 130*	*04/04/16 15:05*	*04/06/16 18:01*	*1*
Tetrachloro-m-xylene	*82*		*44 - 130*	*04/04/16 15:05*	*04/06/16 18:01*	*1*

Client Sample ID: FP-06-0-0.5 **Lab Sample ID: 280-81417-9**
Date Collected: 03/30/16 09:50 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 77.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18.2	U	40.1	18.2	6.18	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1221	20.6	U	57.1	20.6	18.9	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1232	18.2	U	40.1	18.2	6.22	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1242	40.1	U	40.1	40.1	11.1	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1248	24.3	U	40.1	24.3	6.81	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1254	20.6	U	40.1	20.6	6.70	ug/Kg	☼	04/06/16 18:23	1
Aroclor 1260	**71.2**		40.1	9.35	3.22	ug/Kg	☼	04/06/16 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*59 - 130*	*04/04/16 15:05*	*04/06/16 18:23*	*1*
Tetrachloro-m-xylene	*83*		*44 - 130*	*04/04/16 15:05*	*04/06/16 18:23*	*1*

Client Sample ID: FP-08-0-0.5 **Lab Sample ID: 280-81417-11**
Date Collected: 03/30/16 10:05 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.1**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19.1	U	42.0	19.1	6.47	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1221	21.6	U	59.8	21.6	19.8	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1232	19.1	U	42.0	19.1	6.51	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1242	42.0	U	42.0	42.0	11.6	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1248	25.4	U	42.0	25.4	7.13	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1254	21.6	U	42.0	21.6	7.02	ug/Kg	☼	04/06/16 18:44	1
Aroclor 1260	**282**		42.0	9.79	3.37	ug/Kg	☼	04/06/16 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*59 - 130*	*04/04/16 15:05*	*04/06/16 18:44*	*1*
Tetrachloro-m-xylene	*78*		*44 - 130*	*04/04/16 15:05*	*04/06/16 18:44*	*1*

Client Sample ID: FP-05-0-0.5 **Lab Sample ID: 280-81417-13**
Date Collected: 03/30/16 10:15 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.2**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18.1	U	39.8	18.1	6.14	ug/Kg	☼	04/07/16 23:11	1
Aroclor 1221	20.5	U	56.7	20.5	18.8	ug/Kg	☼	04/07/16 23:11	1
Aroclor 1232	18.1	U	39.8	18.1	6.17	ug/Kg	☼	04/07/16 23:11	1
Aroclor 1242	39.8	U	39.8	39.8	11.0	ug/Kg	☼	04/07/16 23:11	1
Aroclor 1248	24.1	U	39.8	24.1	6.77	ug/Kg	☼	04/07/16 23:11	1
Aroclor 1254	20.5	U	39.8	20.5	6.66	ug/Kg	☼	04/07/16 23:11	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-05-0-0.5
Date Collected: 03/30/16 10:15
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-13
Matrix: Solid
Percent Solids: 80.2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1260	**163**		39.8	9.29	3.20	ug/Kg	☼	04/07/16 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*78*		*59 - 130*	*04/05/16 18:02*	*04/07/16 23:11*	*1*
Tetrachloro-m-xylene	*86*		*44 - 130*	*04/05/16 18:02*	*04/07/16 23:11*	*1*

Client Sample ID: FP-10-0-0.5
Date Collected: 03/30/16 10:25
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-15
Matrix: Solid
Percent Solids: 76.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19.1	U	42.0	19.1	6.48	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1221	21.6	U	59.8	21.6	19.9	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1232	19.1	U	42.0	19.1	6.52	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1242	42.0	U	42.0	42.0	11.6	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1248	25.5	U	42.0	25.5	7.14	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1254	21.6	U	42.0	21.6	7.03	ug/Kg	☼	04/07/16 23:33	1
Aroclor 1260	**56.9**		42.0	9.80	3.37	ug/Kg	☼	04/07/16 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*87*		*59 - 130*	*04/05/16 18:02*	*04/07/16 23:33*	*1*
Tetrachloro-m-xylene	*84*		*44 - 130*	*04/05/16 18:02*	*04/07/16 23:33*	*1*

Client Sample ID: FP-10-0-0.5-D
Date Collected: 03/30/16 10:25
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-16
Matrix: Solid
Percent Solids: 75.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19.0	U	41.9	19.0	6.46	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1221	21.6	U	59.6	21.6	19.8	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1232	19.0	U	41.9	19.0	6.50	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1242	41.9	U	41.9	41.9	11.6	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1248	25.4	U	41.9	25.4	7.12	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1254	21.6	U	41.9	21.6	7.00	ug/Kg	☼	04/07/16 23:54	1
Aroclor 1260	**361**		41.9	9.77	3.36	ug/Kg	☼	04/07/16 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*77*		*59 - 130*	*04/05/16 18:02*	*04/07/16 23:54*	*1*
Tetrachloro-m-xylene	*90*		*44 - 130*	*04/05/16 18:02*	*04/07/16 23:54*	*1*

Client Sample ID: FP-07-0-0.5
Date Collected: 03/30/16 10:35
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-18
Matrix: Solid
Percent Solids: 78.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	87.3	U	192	87.3	29.6	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1221	99.0	U	274	99.0	90.8	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1232	87.3	U	192	87.3	29.8	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1242	192	U	192	192	53.1	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1248	116	U	192	116	32.7	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1254	99.0	U	192	99.0	32.1	ug/Kg	☼	04/08/16 12:49	5
Aroclor 1260	**632**	**J**	192	44.8	15.4	ug/Kg	☼	04/08/16 12:49	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	43	D X	59 - 130	04/05/16 18:02	04/08/16 12:49	5
Tetrachloro-m-xylene	53	D	44 - 130	04/05/16 18:02	04/08/16 12:49	5

Client Sample ID: FP-09-0-0.5
Date Collected: 03/30/16 10:45
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-20
Matrix: Solid
Percent Solids: 79.7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	690	U	1520	690	234	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1221	782	U	2160	782	718	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1232	690	U	1520	690	236	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1242	1520	U	1520	1520	420	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1248	920	U	1520	920	258	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1254	782	U	1520	782	254	ug/Kg	☼	04/08/16 13:11	40
Aroclor 1260	**8560**		1520	354	122	ug/Kg	☼	04/08/16 13:11	40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	0	D X	59 - 130	04/05/16 18:02	04/08/16 13:11	40
Tetrachloro-m-xylene	0	D X	44 - 130	04/05/16 18:02	04/08/16 13:11	40

Client Sample ID: FP-11-0-0.5
Date Collected: 03/30/16 10:55
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-22
Matrix: Solid
Percent Solids: 75.2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	196	U F1	430	196	66.4	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1221	222	U	613	222	203	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1232	196	U	430	196	66.8	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1242	430	U	430	430	119	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1248	261	U	430	261	73.1	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1254	222	U	430	222	72.0	ug/Kg	☼	04/08/16 13:54	10
Aroclor 1260	**2320**		430	100	34.6	ug/Kg	☼	04/08/16 13:54	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81	D	59 - 130	04/05/16 18:02	04/08/16 13:54	10
Tetrachloro-m-xylene	84	D	44 - 130	04/05/16 18:02	04/08/16 13:54	10

Client Sample ID: FP-12-0-0.5
Date Collected: 03/30/16 11:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-24
Matrix: Solid
Percent Solids: 79.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	74.1	U	163	74.1	25.1	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1221	83.9	U	232	83.9	77.0	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1232	74.1	U	163	74.1	25.3	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1242	163	U	163	163	45.0	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1248	98.7	U	163	98.7	27.7	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1254	83.9	U	163	83.9	27.3	ug/Kg	☼	04/08/16 14:59	4
Aroclor 1260	**474**		163	38.0	13.1	ug/Kg	☼	04/08/16 14:59	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	88	D	59 - 130	04/05/16 18:02	04/08/16 14:59	4
Tetrachloro-m-xylene	85	D	44 - 130	04/05/16 18:02	04/08/16 14:59	4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: FP-13-0-0.5
Date Collected: 03/30/16 11:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-26
Matrix: Solid
Percent Solids: 76.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	192	U	422	192	65.1	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1221	217	U	601	217	200	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1232	192	U	422	192	65.5	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1242	422	U	422	422	117	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1248	256	U	422	256	71.8	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1254	217	U	422	217	70.6	ug/Kg	☼		04/08/16 15:21	10
Aroclor 1260	**3260**		422	98.5	33.9	ug/Kg	☼		04/08/16 15:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*77*	*D*	*59 - 130*	*04/05/16 18:02*	*04/08/16 15:21*	*10*
Tetrachloro-m-xylene	*78*	*D*	*44 - 130*	*04/05/16 18:02*	*04/08/16 15:21*	*10*

Client Sample ID: FP-15-0-0.5
Date Collected: 03/30/16 11:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-28
Matrix: Solid
Percent Solids: 80.6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	364	U	800	364	123	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1221	412	U	1140	412	378	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1232	364	U	800	364	124	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1242	800	U	800	800	221	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1248	485	U	800	485	136	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1254	412	U	800	412	134	ug/Kg	☼		04/08/16 15:42	20
Aroclor 1260	**4940**		800	187	64.2	ug/Kg	☼		04/08/16 15:42	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*	*D X*	*59 - 130*	*04/05/16 18:02*	*04/08/16 15:42*	*20*
Tetrachloro-m-xylene	*72*	*D*	*44 - 130*	*04/05/16 18:02*	*04/08/16 15:42*	*20*

Client Sample ID: FP-14-0-0.5
Date Collected: 03/30/16 11:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-30
Matrix: Solid
Percent Solids: 81.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	16.8	U	37.0	16.8	5.70	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1221	19.0	U	52.7	19.0	17.5	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1232	16.8	U	37.0	16.8	5.74	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1242	37.0	U	37.0	37.0	10.2	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1248	22.4	U	37.0	22.4	6.29	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1254	19.0	U	37.0	19.0	6.19	ug/Kg	☼		04/08/16 03:30	1
Aroclor 1260	8.63	U	37.0	8.63	2.97	ug/Kg	☼		04/08/16 03:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*59 - 130*	*04/05/16 18:02*	*04/08/16 03:30*	*1*
Tetrachloro-m-xylene	*90*		*44 - 130*	*04/05/16 18:02*	*04/08/16 03:30*	*1*

Client Sample ID: FP-16-0-0.5
Date Collected: 03/30/16 11:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-32
Matrix: Solid
Percent Solids: 76.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	177	U F1	390	177	60.2	ug/Kg	☼		04/08/16 16:04	10
Aroclor 1221	201	U	556	201	184	ug/Kg	☼		04/08/16 16:04	10
Aroclor 1232	177	U	390	177	60.5	ug/Kg	☼		04/08/16 16:04	10

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-16-0-0.5 **Lab Sample ID: 280-81417-32**
Date Collected: 03/30/16 11:50 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 76.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1242	390	U	390	390	108	ug/Kg	☼	04/08/16 16:04	10
Aroclor 1248	236	U	390	236	66.3	ug/Kg	☼	04/08/16 16:04	10
Aroclor 1254	201	U	390	201	65.3	ug/Kg	☼	04/08/16 16:04	10
Aroclor 1260	**2000**	**F2**	390	91.0	31.3	ug/Kg	☼	04/08/16 16:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*75*	*D*	*59 - 130*	*04/05/16 18:02*	*04/08/16 16:04*	*10*
Tetrachloro-m-xylene	*84*	*D*	*44 - 130*	*04/05/16 18:02*	*04/08/16 16:04*	*10*

Client Sample ID: FP-17-0-0.5 **Lab Sample ID: 280-81417-34**
Date Collected: 03/30/16 12:05 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 86.6**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	6400	U	14100	6400	2170	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1221	7250	U	20000	7250	6650	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1232	6400	U	14100	6400	2180	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1242	14100	U	14100	14100	3890	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1248	8530	U	14100	8530	2390	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1254	7250	U	14100	7250	2350	ug/Kg	☼	04/08/16 17:09	400
Aroclor 1260	**55600**		14100	3280	1130	ug/Kg	☼	04/08/16 17:09	400

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*0*	*D X*	*59 - 130*	*04/05/16 18:02*	*04/08/16 17:09*	*400*
Tetrachloro-m-xylene	*0*	*D X*	*44 - 130*	*04/05/16 18:02*	*04/08/16 17:09*	*400*

Client Sample ID: FP-18-0-0.5 **Lab Sample ID: 280-81417-36**
Date Collected: 03/30/16 12:15 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 75.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19.9	U	43.8	19.9	6.76	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1221	22.6	U	62.4	22.6	20.7	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1232	19.9	U	43.8	19.9	6.80	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1242	43.8	U	43.8	43.8	12.1	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1248	26.6	U	43.8	26.6	7.45	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1254	22.6	U	43.8	22.6	7.33	ug/Kg	☼	04/08/16 05:18	1
Aroclor 1260	**41.8**	**J**	43.8	10.2	3.52	ug/Kg	☼	04/08/16 05:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*59 - 130*	*04/05/16 18:02*	*04/08/16 05:18*	*1*
Tetrachloro-m-xylene	*87*		*44 - 130*	*04/05/16 18:02*	*04/08/16 05:18*	*1*

Client Sample ID: FP-19-0-0.5 **Lab Sample ID: 280-81417-38**
Date Collected: 03/30/16 12:25 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	72.0	U	158	72.0	24.4	ug/Kg	☼	04/08/16 17:31	4
Aroclor 1221	81.6	U	226	81.6	74.9	ug/Kg	☼	04/08/16 17:31	4
Aroclor 1232	72.0	U	158	72.0	24.6	ug/Kg	☼	04/08/16 17:31	4
Aroclor 1242	158	U	158	158	43.8	ug/Kg	☼	04/08/16 17:31	4
Aroclor 1248	96.0	U	158	96.0	26.9	ug/Kg	☼	04/08/16 17:31	4
Aroclor 1254	81.6	U	158	81.6	26.5	ug/Kg	☼	04/08/16 17:31	4

1 2 3 4 5 6 7 8 9 10 11 12 13

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-19-0-0.5 **Lab Sample ID: 280-81417-38**
Date Collected: 03/30/16 12:25 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1260	**423**		158	37.0	12.7	ug/Kg	☼		04/08/16 17:31	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*88*	*D*	*59 - 130*	*04/05/16 18:02*	*04/08/16 17:31*	*4*
Tetrachloro-m-xylene	*86*	*D*	*44 - 130*	*04/05/16 18:02*	*04/08/16 17:31*	*4*

Client Sample ID: FP-20-0-0.5 **Lab Sample ID: 280-81417-40**
Date Collected: 03/30/16 12:35 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.5**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	17.2	U	37.9	17.2	5.84	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1221	19.5	U	53.9	19.5	17.9	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1232	17.2	U	37.9	17.2	5.87	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1242	37.9	U	37.9	37.9	10.5	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1248	22.9	U	37.9	22.9	6.43	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1254	19.5	U	37.9	19.5	6.33	ug/Kg	☼		04/08/16 06:01	1
Aroclor 1260	8.83	U	37.9	8.83	3.04	ug/Kg	☼		04/08/16 06:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*59 - 130*	*04/05/16 18:02*	*04/08/16 06:01*	*1*
Tetrachloro-m-xylene	*87*		*44 - 130*	*04/05/16 18:02*	*04/08/16 06:01*	*1*

Client Sample ID: FP-20-0-0.5-D **Lab Sample ID: 280-81417-42**
Date Collected: 03/30/16 12:35 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	17.4	U	38.2	17.4	5.89	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1221	19.7	U	54.4	19.7	18.0	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1232	17.4	U	38.2	17.4	5.92	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1242	38.2	U	38.2	38.2	10.5	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1248	23.1	U	38.2	23.1	6.49	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1254	19.7	U	38.2	19.7	6.39	ug/Kg	☼		04/08/16 06:23	1
Aroclor 1260	8.91	U	38.2	8.91	3.07	ug/Kg	☼		04/08/16 06:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*59 - 130*	*04/05/16 18:02*	*04/08/16 06:23*	*1*
Tetrachloro-m-xylene	*86*		*44 - 130*	*04/05/16 18:02*	*04/08/16 06:23*	*1*

Client Sample ID: FP-21-0-0.5 **Lab Sample ID: 280-81417-43**
Date Collected: 03/30/16 13:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	88.6	U	195	88.6	30.1	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1221	100	U	278	100	92.2	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1232	88.6	U	195	88.6	30.3	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1242	195	U	195	195	53.9	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1248	118	U	195	118	33.2	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1254	100	U	195	100	32.6	ug/Kg	☼		04/08/16 17:52	5
Aroclor 1260	**943**		195	45.5	15.7	ug/Kg	☼		04/08/16 17:52	5

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*	*D*	*59 - 130*	*04/05/16 18:02*	*04/08/16 17:52*	*5*
Tetrachloro-m-xylene	*86*	*D*	*44 - 130*	*04/05/16 18:02*	*04/08/16 17:52*	*5*

General Chemistry

Client Sample ID: FP-01-0-0.5
Date Collected: 03/30/16 09:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-1
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**19.9**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**80.1**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-03-0-0.5
Date Collected: 03/30/16 09:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-3
Matrix: Solid
Percent Solids: 82.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**17.1**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**82.9**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-02-0-0.5
Date Collected: 03/30/16 09:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-5
Matrix: Solid
Percent Solids: 76.7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**23.3**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**76.7**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-04-0-0.5
Date Collected: 03/30/16 09:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-7
Matrix: Solid
Percent Solids: 78.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**21.6**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**78.4**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-06-0-0.5
Date Collected: 03/30/16 09:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-9
Matrix: Solid
Percent Solids: 77.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**22.1**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**77.9**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-08-0-0.5
Date Collected: 03/30/16 10:05
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-11
Matrix: Solid
Percent Solids: 78.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**21.9**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**78.1**		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-05-0-0.5
Date Collected: 03/30/16 10:15
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-13
Matrix: Solid
Percent Solids: 80.2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**19.8**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**80.2**		0.1	0.1	0.1	%		04/04/16 16:36	1

General Chemistry

Client Sample ID: FP-10-0-0.5
Date Collected: 03/30/16 10:25
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-15
Matrix: Solid
Percent Solids: 76.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	24.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	76.0		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-10-0-0.5-D
Date Collected: 03/30/16 10:25
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-16
Matrix: Solid
Percent Solids: 75.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	24.5		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.5		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-07-0-0.5
Date Collected: 03/30/16 10:35
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-18
Matrix: Solid
Percent Solids: 78.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	21.5		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	78.5		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-09-0-0.5
Date Collected: 03/30/16 10:45
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-20
Matrix: Solid
Percent Solids: 79.7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	20.3		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	79.7		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-11-0-0.5
Date Collected: 03/30/16 10:55
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-22
Matrix: Solid
Percent Solids: 75.2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	24.8		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.2		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-12-0-0.5
Date Collected: 03/30/16 11:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-24
Matrix: Solid
Percent Solids: 79.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	20.6		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	79.4		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-13-0-0.5
Date Collected: 03/30/16 11:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-26
Matrix: Solid
Percent Solids: 76.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	23.9		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	76.1		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-15-0-0.5
Date Collected: 03/30/16 11:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-28
Matrix: Solid
Percent Solids: 80.6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.4		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.6		0.1	0.1	0.1	%		04/04/16 16:36	1

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

General Chemistry

Client Sample ID: FP-14-0-0.5 — **Lab Sample ID: 280-81417-30**
Date Collected: 03/30/16 11:40 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	18.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	81.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-16-0-0.5 — **Lab Sample ID: 280-81417-32**
Date Collected: 03/30/16 11:50 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 76.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	23.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	76.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-17-0-0.5 — **Lab Sample ID: 280-81417-34**
Date Collected: 03/30/16 12:05 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 86.6**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	13.4		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	86.6		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-18-0-0.5 — **Lab Sample ID: 280-81417-36**
Date Collected: 03/30/16 12:15 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	25.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.0		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-19-0-0.5 — **Lab Sample ID: 280-81417-38**
Date Collected: 03/30/16 12:25 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	18.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	81.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-20-0-0.5 — **Lab Sample ID: 280-81417-40**
Date Collected: 03/30/16 12:35 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 80.5**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.5		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.5		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-20-0-0.5-D — **Lab Sample ID: 280-81417-42**
Date Collected: 03/30/16 12:35 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 81.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	81.0		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-21-0-0.5 — **Lab Sample ID: 280-81417-43**
Date Collected: 03/30/16 13:00 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 81.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	18.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	81.9		0.1	0.1	0.1	%		04/04/16 16:36	1

1 2 3 4 5 6 7 8 9 10 11 12 13

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (59-130)	TCX2 (44-130)
280-81417-1	FP-01-0-0.5	74 D	80 D
280-81417-3	FP-03-0-0.5	70	80
280-81417-5	FP-02-0-0.5	59	79
280-81417-5 MS	FP-02-0-0.5	59	71
280-81417-5 MSD	FP-02-0-0.5	63	80
280-81417-7	FP-04-0-0.5	79	82
280-81417-9	FP-06-0-0.5	79	83
280-81417-11	FP-08-0-0.5	76	78
280-81417-13	FP-05-0-0.5	78	86
280-81417-15	FP-10-0-0.5	87	84
280-81417-16	FP-10-0-0.5-D	77	90
280-81417-20	FP-09-0-0.5	0 D X	0 D X
280-81417-22	FP-11-0-0.5	81 D	84 D
280-81417-22 MS	FP-11-0-0.5	83 D	80 D
280-81417-22 MSD	FP-11-0-0.5	82 D	81 D
280-81417-24	FP-12-0-0.5	88 D	85 D
280-81417-26	FP-13-0-0.5	77 D	78 D
280-81417-28	FP-15-0-0.5	56 D X	72 D
280-81417-30	FP-14-0-0.5	81	90
280-81417-32	FP-16-0-0.5	75 D	84 D
280-81417-32 MS	FP-16-0-0.5	85 D	79 D
280-81417-32 MSD	FP-16-0-0.5	97 D	86 D
280-81417-34	FP-17-0-0.5	0 D X	0 D X
280-81417-36	FP-18-0-0.5	80	87
280-81417-38	FP-19-0-0.5	88 D	86 D
280-81417-40	FP-20-0-0.5	82	87
280-81417-42	FP-20-0-0.5-D	81	86
280-81417-43	FP-21-0-0.5	86 D	86 D
LCS 280-319319/2-A	Lab Control Sample	97	93
LCS 280-319512/2-A	Lab Control Sample	100	90
MB 280-319319/1-A	Method Blank	97	92
MB 280-319512/1-A	Method Blank	102	94

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (59-130)	TCX1 (44-130)
280-81417-18	FP-07-0-0.5	43 D X	53 D

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

QC Sample Results

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-319319/1-A
Matrix: Solid
Analysis Batch: 319635

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 319319

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	13.8	U	30.4	13.8	4.68	ug/Kg		04/06/16 13:41	1
Aroclor 1221	15.6	U	43.3	15.6	14.4	ug/Kg		04/06/16 13:41	1
Aroclor 1232	13.8	U	30.4	13.8	4.71	ug/Kg		04/06/16 13:41	1
Aroclor 1242	30.4	U	30.4	30.4	8.39	ug/Kg		04/06/16 13:41	1
Aroclor 1248	18.4	U	30.4	18.4	5.16	ug/Kg		04/06/16 13:41	1
Aroclor 1254	15.6	U	30.4	15.6	5.08	ug/Kg		04/06/16 13:41	1
Aroclor 1260	7.09	U	30.4	7.09	2.44	ug/Kg		04/06/16 13:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*97*		*59 - 130*	*04/04/16 15:05*	*04/06/16 13:41*	*1*
Tetrachloro-m-xylene	*92*		*44 - 130*	*04/04/16 15:05*	*04/06/16 13:41*	*1*

Lab Sample ID: LCS 280-319319/2-A
Matrix: Solid
Analysis Batch: 319635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 319319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	61.5	56.31		ug/Kg		92	47 - 134
Aroclor 1260	61.5	60.64		ug/Kg		99	53 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*97*		*59 - 130*
Tetrachloro-m-xylene	*93*		*44 - 130*

Lab Sample ID: 280-81417-5 MS
Matrix: Solid
Analysis Batch: 319635

Client Sample ID: FP-02-0-0.5
Prep Type: Total/NA
Prep Batch: 319319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	19.2	U	86.6	59.05		ug/Kg	☼	68	47 - 134
Aroclor 1260	55.3		86.6	142.7		ug/Kg	☼	101	53 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*59*		*59 - 130*
Tetrachloro-m-xylene	*71*		*44 - 130*

Lab Sample ID: 280-81417-5 MSD
Matrix: Solid
Analysis Batch: 319635

Client Sample ID: FP-02-0-0.5
Prep Type: Total/NA
Prep Batch: 319319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	19.2	U	85.2	68.32		ug/Kg	☼	80	47 - 134	15	30
Aroclor 1260	55.3		85.2	136.0		ug/Kg	☼	95	53 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*63*		*59 - 130*
Tetrachloro-m-xylene	*80*		*44 - 130*

QC Sample Results

Client: Tetra Tech EC, Inc. TestAmerica Job ID: 280-81417-1
Project/Site: NSA Crane CTO WE38

Lab Sample ID: MB 280-319512/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 319773 **Prep Batch: 319512**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	15.0	U	33.0	15.0	5.09	ug/Kg		04/07/16 22:06	1
Aroclor 1221	17.0	U	47.0	17.0	15.6	ug/Kg		04/07/16 22:06	1
Aroclor 1232	15.0	U	33.0	15.0	5.12	ug/Kg		04/07/16 22:06	1
Aroclor 1242	33.0	U	33.0	33.0	9.12	ug/Kg		04/07/16 22:06	1
Aroclor 1248	20.0	U	33.0	20.0	5.61	ug/Kg		04/07/16 22:06	1
Aroclor 1254	17.0	U	33.0	17.0	5.52	ug/Kg		04/07/16 22:06	1
Aroclor 1260	7.70	U	33.0	7.70	2.65	ug/Kg		04/07/16 22:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*102*		*59 - 130*	*04/05/16 18:02*	*04/07/16 22:06*	*1*
Tetrachloro-m-xylene	*94*		*44 - 130*	*04/05/16 18:02*	*04/07/16 22:06*	*1*

Lab Sample ID: LCS 280-319512/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 319773 **Prep Batch: 319512**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	66.7	56.50		ug/Kg		85	47 - 134
Aroclor 1260	66.7	61.18		ug/Kg		92	53 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*59 - 130*
Tetrachloro-m-xylene	*90*		*44 - 130*

Lab Sample ID: 280-81417-22 MS **Client Sample ID: FP-11-0-0.5**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 319934 **Prep Batch: 319512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	196	U F1	85.5	192	U D F1	ug/Kg	☼	0	47 - 134
Aroclor 1260	2320		85.5	3030	D 4	ug/Kg	☼	836	53 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*83*	*D*	*59 - 130*
Tetrachloro-m-xylene	*80*	*D*	*44 - 130*

Lab Sample ID: 280-81417-22 MSD **Client Sample ID: FP-11-0-0.5**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 319934 **Prep Batch: 319512**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	196	U F1	83.9	189	U D F1	ug/Kg	☼	0	47 - 134	NC	30
Aroclor 1260	2320		83.9	2808	D 4	ug/Kg	☼	587	53 - 140	8	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*82*	*D*	*59 - 130*
Tetrachloro-m-xylene	*81*	*D*	*44 - 130*

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 280-81417-32 MS
Matrix: Solid
Analysis Batch: 319934

Client Sample ID: FP-16-0-0.5
Prep Type: Total/NA
Prep Batch: 319512

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	177	U F1	83.6	188	U D F1	ug/Kg	☼	0	47 - 134
Aroclor 1260	2000	F2	83.6	1679	D 4	ug/Kg	☼	-386	53 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*85*	*D*	*59 - 130*
Tetrachloro-m-xylene	*79*	*D*	*44 - 130*

Lab Sample ID: 280-81417-32 MSD
Matrix: Solid
Analysis Batch: 319934

Client Sample ID: FP-16-0-0.5
Prep Type: Total/NA
Prep Batch: 319512

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	177	U F1	79.8	179	U D F1	ug/Kg	☼	0	47 - 134	NC	30
Aroclor 1260	2000	F2	79.8	3755	D 4 F2	ug/Kg	☼	2198	53 - 140	76	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*97*	*D*	*59 - 130*
Tetrachloro-m-xylene	*86*	*D*	*44 - 130*

Method: Moisture - Percent Moisture

Lab Sample ID: 280-81417-38 DU
Matrix: Solid
Analysis Batch: 319349

Client Sample ID: FP-19-0-0.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	18.1		17.1		%		5	20
Percent Solids	81.9		82.9		%		1	20

GC Semi VOA

Prep Batch: 319319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-1	FP-01-0-0.5	Total/NA	Solid	3546	
280-81417-3	FP-03-0-0.5	Total/NA	Solid	3546	
280-81417-5	FP-02-0-0.5	Total/NA	Solid	3546	
280-81417-5 MS	FP-02-0-0.5	Total/NA	Solid	3546	
280-81417-5 MSD	FP-02-0-0.5	Total/NA	Solid	3546	
280-81417-7	FP-04-0-0.5	Total/NA	Solid	3546	
280-81417-9	FP-06-0-0.5	Total/NA	Solid	3546	
280-81417-11	FP-08-0-0.5	Total/NA	Solid	3546	
LCS 280-319319/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-319319/1-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 319512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-13	FP-05-0-0.5	Total/NA	Solid	3546	
280-81417-15	FP-10-0-0.5	Total/NA	Solid	3546	
280-81417-16	FP-10-0-0.5-D	Total/NA	Solid	3546	
280-81417-18	FP-07-0-0.5	Total/NA	Solid	3546	
280-81417-20	FP-09-0-0.5	Total/NA	Solid	3546	
280-81417-22	FP-11-0-0.5	Total/NA	Solid	3546	
280-81417-22 MS	FP-11-0-0.5	Total/NA	Solid	3546	
280-81417-22 MSD	FP-11-0-0.5	Total/NA	Solid	3546	
280-81417-24	FP-12-0-0.5	Total/NA	Solid	3546	
280-81417-26	FP-13-0-0.5	Total/NA	Solid	3546	
280-81417-28	FP-15-0-0.5	Total/NA	Solid	3546	
280-81417-30	FP-14-0-0.5	Total/NA	Solid	3546	
280-81417-32	FP-16-0-0.5	Total/NA	Solid	3546	
280-81417-32 MS	FP-16-0-0.5	Total/NA	Solid	3546	
280-81417-32 MSD	FP-16-0-0.5	Total/NA	Solid	3546	
280-81417-34	FP-17-0-0.5	Total/NA	Solid	3546	
280-81417-36	FP-18-0-0.5	Total/NA	Solid	3546	
280-81417-38	FP-19-0-0.5	Total/NA	Solid	3546	
280-81417-40	FP-20-0-0.5	Total/NA	Solid	3546	
280-81417-42	FP-20-0-0.5-D	Total/NA	Solid	3546	
280-81417-43	FP-21-0-0.5	Total/NA	Solid	3546	
LCS 280-319512/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-319512/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 319635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-1	FP-01-0-0.5	Total/NA	Solid	8082A	319319
280-81417-3	FP-03-0-0.5	Total/NA	Solid	8082A	319319
280-81417-5	FP-02-0-0.5	Total/NA	Solid	8082A	319319
280-81417-5 MS	FP-02-0-0.5	Total/NA	Solid	8082A	319319
280-81417-5 MSD	FP-02-0-0.5	Total/NA	Solid	8082A	319319
280-81417-7	FP-04-0-0.5	Total/NA	Solid	8082A	319319
280-81417-9	FP-06-0-0.5	Total/NA	Solid	8082A	319319
280-81417-11	FP-08-0-0.5	Total/NA	Solid	8082A	319319
LCS 280-319319/2-A	Lab Control Sample	Total/NA	Solid	8082A	319319
MB 280-319319/1-A	Method Blank	Total/NA	Solid	8082A	319319

GC Semi VOA (Continued)

Analysis Batch: 319773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-13	FP-05-0-0.5	Total/NA	Solid	8082A	319512
280-81417-15	FP-10-0-0.5	Total/NA	Solid	8082A	319512
280-81417-16	FP-10-0-0.5-D	Total/NA	Solid	8082A	319512
280-81417-30	FP-14-0-0.5	Total/NA	Solid	8082A	319512
280-81417-36	FP-18-0-0.5	Total/NA	Solid	8082A	319512
280-81417-40	FP-20-0-0.5	Total/NA	Solid	8082A	319512
280-81417-42	FP-20-0-0.5-D	Total/NA	Solid	8082A	319512
LCS 280-319512/2-A	Lab Control Sample	Total/NA	Solid	8082A	319512
MB 280-319512/1-A	Method Blank	Total/NA	Solid	8082A	319512

Analysis Batch: 319934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-18	FP-07-0-0.5	Total/NA	Solid	8082A	319512
280-81417-20	FP-09-0-0.5	Total/NA	Solid	8082A	319512
280-81417-22	FP-11-0-0.5	Total/NA	Solid	8082A	319512
280-81417-22 MS	FP-11-0-0.5	Total/NA	Solid	8082A	319512
280-81417-22 MSD	FP-11-0-0.5	Total/NA	Solid	8082A	319512
280-81417-24	FP-12-0-0.5	Total/NA	Solid	8082A	319512
280-81417-26	FP-13-0-0.5	Total/NA	Solid	8082A	319512
280-81417-28	FP-15-0-0.5	Total/NA	Solid	8082A	319512
280-81417-32	FP-16-0-0.5	Total/NA	Solid	8082A	319512
280-81417-32 MS	FP-16-0-0.5	Total/NA	Solid	8082A	319512
280-81417-32 MSD	FP-16-0-0.5	Total/NA	Solid	8082A	319512
280-81417-34	FP-17-0-0.5	Total/NA	Solid	8082A	319512
280-81417-38	FP-19-0-0.5	Total/NA	Solid	8082A	319512
280-81417-43	FP-21-0-0.5	Total/NA	Solid	8082A	319512

General Chemistry

Analysis Batch: 319349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-1	FP-01-0-0.5	Total/NA	Solid	Moisture	
280-81417-3	FP-03-0-0.5	Total/NA	Solid	Moisture	
280-81417-5	FP-02-0-0.5	Total/NA	Solid	Moisture	
280-81417-7	FP-04-0-0.5	Total/NA	Solid	Moisture	
280-81417-9	FP-06-0-0.5	Total/NA	Solid	Moisture	
280-81417-11	FP-08-0-0.5	Total/NA	Solid	Moisture	
280-81417-13	FP-05-0-0.5	Total/NA	Solid	Moisture	
280-81417-15	FP-10-0-0.5	Total/NA	Solid	Moisture	
280-81417-16	FP-10-0-0.5-D	Total/NA	Solid	Moisture	
280-81417-18	FP-07-0-0.5	Total/NA	Solid	Moisture	
280-81417-20	FP-09-0-0.5	Total/NA	Solid	Moisture	
280-81417-22	FP-11-0-0.5	Total/NA	Solid	Moisture	
280-81417-24	FP-12-0-0.5	Total/NA	Solid	Moisture	
280-81417-26	FP-13-0-0.5	Total/NA	Solid	Moisture	
280-81417-28	FP-15-0-0.5	Total/NA	Solid	Moisture	
280-81417-30	FP-14-0-0.5	Total/NA	Solid	Moisture	
280-81417-32	FP-16-0-0.5	Total/NA	Solid	Moisture	
280-81417-34	FP-17-0-0.5	Total/NA	Solid	Moisture	
280-81417-36	FP-18-0-0.5	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 319349 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81417-38	FP-19-0-0.5	Total/NA	Solid	Moisture	
280-81417-38 DU	FP-19-0-0.5	Total/NA	Solid	Moisture	
280-81417-40	FP-20-0-0.5	Total/NA	Solid	Moisture	
280-81417-42	FP-20-0-0.5-D	Total/NA	Solid	Moisture	
280-81417-43	FP-21-0-0.5	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Client Sample ID: FP-01-0-0.5
Date Collected: 03/30/16 09:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-01-0-0.5
Date Collected: 03/30/16 09:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-1
Matrix: Solid
Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.3 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		4	32.3 g	10 mL	319635	04/07/16 08:21	TDJ	TAL DEN

Client Sample ID: FP-03-0-0.5
Date Collected: 03/30/16 09:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-03-0-0.5
Date Collected: 03/30/16 09:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-3
Matrix: Solid
Percent Solids: 82.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.4 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		1	31.4 g	10 mL	319635	04/06/16 16:13	TDJ	TAL DEN

Client Sample ID: FP-02-0-0.5
Date Collected: 03/30/16 09:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-02-0-0.5
Date Collected: 03/30/16 09:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-5
Matrix: Solid
Percent Solids: 76.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.6 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		1	30.6 g	10 mL	319635	04/06/16 16:34	TDJ	TAL DEN

Client Sample ID: FP-04-0-0.5 **Lab Sample ID: 280-81417-7**
Date Collected: 03/30/16 09:40 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-04-0-0.5 **Lab Sample ID: 280-81417-7**
Date Collected: 03/30/16 09:40 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.1 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		1	31.1 g	10 mL	319635	04/06/16 18:01	TDJ	TAL DEN

Client Sample ID: FP-06-0-0.5 **Lab Sample ID: 280-81417-9**
Date Collected: 03/30/16 09:50 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-06-0-0.5 **Lab Sample ID: 280-81417-9**
Date Collected: 03/30/16 09:50 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 77.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.7 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		1	31.7 g	10 mL	319635	04/06/16 18:23	TDJ	TAL DEN

Client Sample ID: FP-08-0-0.5 **Lab Sample ID: 280-81417-11**
Date Collected: 03/30/16 10:05 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-08-0-0.5 **Lab Sample ID: 280-81417-11**
Date Collected: 03/30/16 10:05 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.2 g	10 mL	319319	04/04/16 15:05	DFB1	TAL DEN
Total/NA	Analysis	8082A		1	30.2 g	10 mL	319635	04/06/16 18:44	TDJ	TAL DEN

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Client Sample ID: FP-05-0-0.5
Lab Sample ID: 280-81417-13
Date Collected: 03/30/16 10:15
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-05-0-0.5
Lab Sample ID: 280-81417-13
Date Collected: 03/30/16 10:15
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.0 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	31.0 g	10 mL	319773	04/07/16 23:11	TDJ	TAL DEN

Client Sample ID: FP-10-0-0.5
Lab Sample ID: 280-81417-15
Date Collected: 03/30/16 10:25
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-10-0-0.5
Lab Sample ID: 280-81417-15
Date Collected: 03/30/16 10:25
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 76.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.0 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	31.0 g	10 mL	319773	04/07/16 23:33	TDJ	TAL DEN

Client Sample ID: FP-10-0-0.5-D
Lab Sample ID: 280-81417-16
Date Collected: 03/30/16 10:25
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-10-0-0.5-D
Lab Sample ID: 280-81417-16
Date Collected: 03/30/16 10:25
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 75.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.3 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	31.3 g	10 mL	319773	04/07/16 23:54	TDJ	TAL DEN

Client Sample ID: FP-07-0-0.5 — **Lab Sample ID: 280-81417-18**
Date Collected: 03/30/16 10:35 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-07-0-0.5 — **Lab Sample ID: 280-81417-18**
Date Collected: 03/30/16 10:35 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 78.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.8 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		5	32.8 g	10 mL	319934	04/08/16 12:49	TDJ	TAL DEN

Client Sample ID: FP-09-0-0.5 — **Lab Sample ID: 280-81417-20**
Date Collected: 03/30/16 10:45 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-09-0-0.5 — **Lab Sample ID: 280-81417-20**
Date Collected: 03/30/16 10:45 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 79.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.7 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		40	32.7 g	10 mL	319934	04/08/16 13:11	TDJ	TAL DEN

Client Sample ID: FP-11-0-0.5 — **Lab Sample ID: 280-81417-22**
Date Collected: 03/30/16 10:55 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-11-0-0.5 — **Lab Sample ID: 280-81417-22**
Date Collected: 03/30/16 10:55 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.6 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		10	30.6 g	10 mL	319934	04/08/16 13:54	TDJ	TAL DEN

1 2 3 4 5 6 7 8 9 10 11 12 13

Client Sample ID: FP-12-0-0.5 **Lab Sample ID: 280-81417-24**
Date Collected: 03/30/16 11:10 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-12-0-0.5 **Lab Sample ID: 280-81417-24**
Date Collected: 03/30/16 11:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 79.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.6 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		4	30.6 g	10 mL	319934	04/08/16 14:59	TDJ	TAL DEN

Client Sample ID: FP-13-0-0.5 **Lab Sample ID: 280-81417-26**
Date Collected: 03/30/16 11:20 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-13-0-0.5 **Lab Sample ID: 280-81417-26**
Date Collected: 03/30/16 11:20 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 76.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.8 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		10	30.8 g	10 mL	319934	04/08/16 15:21	TDJ	TAL DEN

Client Sample ID: FP-15-0-0.5 **Lab Sample ID: 280-81417-28**
Date Collected: 03/30/16 11:30 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-15-0-0.5 **Lab Sample ID: 280-81417-28**
Date Collected: 03/30/16 11:30 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.7 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		20	30.7 g	10 mL	319934	04/08/16 15:42	TDJ	TAL DEN

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81417-1

Client Sample ID: FP-14-0-0.5
Date Collected: 03/30/16 11:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-14-0-0.5
Date Collected: 03/30/16 11:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-30
Matrix: Solid
Percent Solids: 81.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.7 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	32.7 g	10 mL	319773	04/08/16 03:30	TDJ	TAL DEN

Client Sample ID: FP-16-0-0.5
Date Collected: 03/30/16 11:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-32
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-16-0-0.5
Date Collected: 03/30/16 11:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-32
Matrix: Solid
Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			33.0 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		10	33.0 g	10 mL	319934	04/08/16 16:04	TDJ	TAL DEN

Client Sample ID: FP-17-0-0.5
Date Collected: 03/30/16 12:05
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-34
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-17-0-0.5
Date Collected: 03/30/16 12:05
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81417-34
Matrix: Solid
Percent Solids: 86.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.5 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		400	32.5 g	10 mL	319934	04/08/16 17:09	TDJ	TAL DEN

Client Sample ID: FP-18-0-0.5
Lab Sample ID: 280-81417-36
Date Collected: 03/30/16 12:15
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-18-0-0.5
Lab Sample ID: 280-81417-36
Date Collected: 03/30/16 12:15
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 75.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.1 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	30.1 g	10 mL	319773	04/08/16 05:18	TDJ	TAL DEN

Client Sample ID: FP-19-0-0.5
Lab Sample ID: 280-81417-38
Date Collected: 03/30/16 12:25
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-19-0-0.5
Lab Sample ID: 280-81417-38
Date Collected: 03/30/16 12:25
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 81.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.5 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		4	30.5 g	10 mL	319934	04/08/16 17:31	TDJ	TAL DEN

Client Sample ID: FP-20-0-0.5
Lab Sample ID: 280-81417-40
Date Collected: 03/30/16 12:35
Matrix: Solid
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-20-0-0.5
Lab Sample ID: 280-81417-40
Date Collected: 03/30/16 12:35
Matrix: Solid
Date Received: 04/01/16 10:20
Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.5 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	32.5 g	10 mL	319773	04/08/16 06:01	TDJ	TAL DEN

Client Sample ID: FP-20-0-0.5-D **Lab Sample ID: 280-81417-42**
Date Collected: 03/30/16 12:35 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-20-0-0.5-D **Lab Sample ID: 280-81417-42**
Date Collected: 03/30/16 12:35 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.0 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	32.0 g	10 mL	319773	04/08/16 06:23	TDJ	TAL DEN

Client Sample ID: FP-21-0-0.5 **Lab Sample ID: 280-81417-43**
Date Collected: 03/30/16 13:00 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-21-0-0.5 **Lab Sample ID: 280-81417-43**
Date Collected: 03/30/16 13:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 81.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.0 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		5	31.0 g	10 mL	319934	04/08/16 17:52	TDJ	TAL DEN

Laboratory References:
TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Tetra Tech EC, Inc.	TestAmerica Job ID: 280-81417-1
Project/Site: NSA Crane CTO WE38

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Login Sample Receipt Checklist

Client: Tetra Tech EC, Inc. Job Number: 280-81417-1

Login Number: 81417 **List Source: TestAmerica Denver**
List Number: 1
Creator: White, Denise E

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-81423-1
Client Project/Site: NSA Crane CTO WE38
Revision: 2

For:
Tetra Tech EC, Inc.
17885 Von Karman Ave
Suite 500
Irvine, California 92614

Attn: Sabina Sudoko

Authorized for release by:
4/18/2016 4:30:28 PM

Jamie Ide, Project Manager I
(303)736-0126
jamie.ide@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
D	The reported value is from a dilution.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
Q	One or more quality control criteria failed.
M	Manual integrated compound.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 280-81423-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE
Client: Tetra Tech EC, Inc.
Project: NSA Crane CTO WE38
Report Number: 280-81423-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Samples were evaluated in accordance with DoD certification. The associated data has been flagged in accordance with DoD QSM 5.0.

Due to laboratory error at the time of SAP and project build, the associated data package does not match the Project Sampling Analysis Plan (SAP). The SAP indicates that Aroclor 1254 is included in the associated batch QC as a spiked analyte; however, the laboratory's standard spike includes Aroclor 1016 and Aroclor 1260 only. As such, the data and batch QC have been reported with Aroclor 1016 and Aroclor 1260.

RECEIPT
The samples were received on 4/1/2016 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.9º C, 2.1º C, 3.2º C, 3.2º C and 5.6º C.

Due to the large quantity of samples received, approximately half the samples received (comprising pages 1 through 4 of 8 pages of the submitted chain of custody) will be reported under a separate cover (280-81417-1). The on hold samples requested on the chain of custody, if activated by the client, will be reported under a separate cover (280-81417-2).

The second half of samples (pages 5 through 8 of 8 pages of the submitted chain of custody) will be found in this report. The on hold samples requested on the chain of custody, if activated by the client, will be reported under a separate cover (280-81423-2).

POLYCHLORINATED BIPHENYLS (PCBS)
DCB Decachlorobiphenyl and/or Tetrachloro-m-xylene failed the surrogate recovery criteria low for FP-35-0-0.5 (280-81423-30), FP-26-0-0.5 (280-81423-7) and FP-28-0-0.5 (280-81423-9). In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required. The surrogate recoveries are calculated from diluted samples and in some cases are diluted below reportable limits.

Samples FP-26-0-0.5 (280-81423-7)[20X], FP-28-0-0.5 (280-81423-9)[400X], FP-34-0-0.5 (280-81423-16)[10X], FP-33-0-0.5 (280-81423-24)[4X], FP-36-0-0.5 (280-81423-26)[4X] and FP-35-0-0.5 (280-81423-30)[40X] required dilution prior to analysis due to an abundance of target analytes. The reporting limits have been adjusted accordingly.

The following samples underwent a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: FP-23-0-0.5 (280-81423-1), FP-22-0-0.5 (280-81423-3), FP-24-0-0.5 (280-81423-5), FP-26-0-0.5 (280-81423-7), FP-28-0-0.5 (280-81423-9), FP-30-0-0.5 (280-81423-11), FP-30-0-0.5-D (280-81423-12), FP-32-0-0.5 (280-81423-14), FP-34-0-0.5 (280-81423-16), FP-34-0-0.5 (280-81423-16[MS]), FP-34-0-0.5 (280-81423-16[MSD]), FP-25-0-0.5 (280-81423-18), FP-27-0-0.5 (280-81423-20), FP-29-0-0.5 (280-81423-22), FP-33-0-0.5 (280-81423-24), FP-36-0-0.5 (280-81423-26), FP-37-0-0.5 (280-81423-28), FP-35-0-0.5 (280-81423-30), FP-38-0-0.5 (280-81423-32), FP-39-0-0.5 (280-81423-34), FP-31-0-0.5 (280-81423-36), FP-40-0-0.5 (280-81423-38), FP-40-0-0.5-D (280-81423-41), (LCS 280-319512/2-A), (LCS 280-319529/2-A), (MB 280-319512/1-A), (MB 280-319529/1-A), (280-81417-A-22-A), ER-03302016 (280-81423-40), (LCS 280-319331/6-A), (LCSD 280-319331/7-A) and (MB 280-319331/1-A).

The following samples could not be thoroughly homogenized prior to sub-sampling due to the nature of the sample matrix: FP-22-0-0.5

Job ID: 280-81423-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

(280-81423-3), FP-24-0-0.5 (280-81423-5), FP-26-0-0.5 (280-81423-7), FP-28-0-0.5 (280-81423-9), FP-30-0-0.5 (280-81423-11), FP-30-0-0.5-D (280-81423-12), FP-32-0-0.5 (280-81423-14), FP-34-0-0.5 (280-81423-16), FP-34-0-0.5 (280-81423-16[MS]), FP-34-0-0.5 (280-81423-16[MSD]), FP-33-0-0.5 (280-81423-24), FP-36-0-0.5 (280-81423-26), FP-35-0-0.5 (280-81423-30) and FP-38-0-0.5 (280-81423-32). It was noted that the samples were clay like in nature.

The MS/MSD performed on sample FP-34-0-0.5 (280-81423-16) exhibited spike recoveries and/or RPD data outside QC control limits for Aroclor 1016 and Aroclor 1260. The associated LCS was in control and demonstrates that operating procedures were in control. No further action was required.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

REVISION
The case narrative was revised to include indication of a discrepancy between the laboratory data package, and the project SAP.

REVISION 2
Formatter was incorrect in report revision; only the report format has been corrected. No changes have been made to the data report.

stAmerica Denver
55 Yarrow Street
rvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 0~~ 5 of 8
Company: Tetra Tech EC, Inc.				Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			
City: Irvine	TAT Requested (days): 10 Days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4654. WE38			
Site: Crane, IN	SSOW#:			

Analysis Requested

280-81423 Chain of Custody

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-23-0-0.5	3/30/16	1310	G	SO			X	1	
FP-23-1.5-2		1315					H	1	HOLD
FP-22-0-0.5		1320					X	1	
FP-22-1.5-2		1325					H	1	HOLD
FP-24-0-0.5		1330					X	1	
FP-24-1.5-2		1335					H	1	HOLD
FP-26-0-0.5		1340					X	1	
FP-26-0.5-1		1345					H	1	HOLD
FP-28-0-0.5		1350					X	1	
FP-28-1.5-2		1355					H	1	HOLD
FP-30-0-0.5		1400					X	1	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Michael Hagan	Date/Time: 3/31/16 1430	Company	Received by: Mayra Soto	Date/Time: 4/1/16 1020	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: Transfer blanks 5.8, 3.4, 3.4, 1.1, 2.1, 2.3 IR-7-02

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4/18/2016

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 8~~ 6 of 8
Company: Tetra Tech EC, Inc.				Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			
City: Irvine	TAT Requested (days): 10 Days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659.WE38			
Site: Crane, IN	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-30-0-0.5-D	3/30/16	1400	G	SO			X	1	
FP-30-1.5-2		1405					H	1	HOLD
FP-32-0-0.5		1410					X	1	
FP-32-1.5-2		1415					H	1	HOLD
FP-34-0-0.5		1420					X	~~3~~	Run MS/MSD
FP-34-1.5-2		1425					H	1	HOLD
FP-25-0-0.5		1430					X	1	
FP-25-1.5-2		1435					H	1	HOLD
FP-27-0-0.5		1440					X	1	
FP-27-1.5-2		1445					H	1	HOLD
FP-29-0-0.5		1450					X	1	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Michael Hagan	3/31/16 1430		Maya Soto	4/1/16 1620	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

5

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 9~~ 7 of 8
Company: Tetra Tech EC, Inc.				Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			
City: Irvine	TAT Requested (days): 10 Days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659. WE38			
Site: Crane, IN	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
FP-29-1.5-2	3/30/16	1455	G	SO			H	1	HOLD
FP-33-0-0.5	↓	1500	↓	↓			X	1	
FP-33-1.5-2		1505					H	1	HOLD
FP-36-0-0.5		1510					X	1	
FP-36-1.5-2		1515					H	1	HOLD
FP-37-0-0.5		1520					X	1	
FP-37-1.5-2		1525					H	1	HOLD
FP-35-0-0.5		1530					X	1	
FP-35-1.5-2		1535					H	1	HOLD
FP-34-0-0.5		1540					X	1	
FP-34-1.5-2	↓	1545	↓	↓			H	1	HOLD

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Michael Hagan	3/31/16 1430		Mejra Abote	4/1/16 1020	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Michael Hagan	Lab PM: Ide, Jamie N	Carrier Tracking No(s):	COC No: 280-51416-18646.1
Client Contact: Sabina Sudoko	Phone: 949-809-5022	E-Mail: jamie.ide@testamericainc.com		Page: ~~Page 1 of 8~~ 8 of 8
Company: Tetra Tech EC, Inc.		Analysis Requested		Job #:
Address: 17885 Von Karman Ave Suite 500	Due Date Requested:			
City: Irvine	TAT Requested (days): 10 Days			
State, Zip: CA, 92614				
Phone: 949-809-5022	PO #: 1123578			
Email: sabina.sudoko@tetratech.com	WO #:			
Project Name: NSA Crane - WE38	Project #: 28014315 4659.WE38			
Site: Crane, IN	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8082A - PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				W		
FP-39-0-0.5	3/30/16	1550	G	SO			X	1	
FP-39-1.5-2	↓	1555	↓	↓			H	1	HOLD
FP-31-0-0.5	↓	1600	↓	↓			X	1	
FP-31-1.5-2	↓	1605	↓	↓			H	1	HOLD
FP-40-0-0.5	↓	1610	↓	↓			X	1	
FP-40-1.5-2	↓	1615	↓	↓			H	1	HOLD
ER-03302016	↓	1620	↓	W			X	2	
FP-40-0-0.5-D	↓	1610	↓	SO			X	1	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☑ Archive For 3 Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Michael Hagan	3/31/16 1430		M. Sotto	4/1/16 1020	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

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4/18/2016

Method Summary

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-81423-1	FP-23-0-0.5	Solid	03/30/16 13:10	04/01/16 10:20
280-81423-3	FP-22-0-0.5	Solid	03/30/16 13:20	04/01/16 10:20
280-81423-5	FP-24-0-0.5	Solid	03/30/16 13:30	04/01/16 10:20
280-81423-7	FP-26-0-0.5	Solid	03/30/16 13:40	04/01/16 10:20
280-81423-9	FP-28-0-0.5	Solid	03/30/16 13:50	04/01/16 10:20
280-81423-11	FP-30-0-0.5	Solid	03/30/16 14:00	04/01/16 10:20
280-81423-12	FP-30-0-0.5-D	Solid	03/30/16 14:00	04/01/16 10:20
280-81423-14	FP-32-0-0.5	Solid	03/30/16 14:10	04/01/16 10:20
280-81423-16	FP-34-0-0.5	Solid	03/30/16 14:20	04/01/16 10:20
280-81423-18	FP-25-0-0.5	Solid	03/30/16 14:30	04/01/16 10:20
280-81423-20	FP-27-0-0.5	Solid	03/30/16 14:40	04/01/16 10:20
280-81423-22	FP-29-0-0.5	Solid	03/30/16 14:50	04/01/16 10:20
280-81423-24	FP-33-0-0.5	Solid	03/30/16 15:00	04/01/16 10:20
280-81423-26	FP-36-0-0.5	Solid	03/30/16 15:10	04/01/16 10:20
280-81423-28	FP-37-0-0.5	Solid	03/30/16 15:20	04/01/16 10:20
280-81423-30	FP-35-0-0.5	Solid	03/30/16 15:30	04/01/16 10:20
280-81423-32	FP-38-0-0.5	Solid	03/30/16 15:40	04/01/16 10:20
280-81423-34	FP-39-0-0.5	Solid	03/30/16 15:50	04/01/16 10:20
280-81423-36	FP-31-0-0.5	Solid	03/30/16 16:00	04/01/16 10:20
280-81423-38	FP-40-0-0.5	Solid	03/30/16 16:10	04/01/16 10:20
280-81423-40	ER-03302016	Water	03/30/16 16:20	04/01/16 10:20
280-81423-41	FP-40-0-0.5-D	Solid	03/30/16 16:10	04/01/16 10:20

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: FP-23-0-0.5 — **Lab Sample ID: 280-81423-1**
Date Collected: 03/30/16 13:10 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 80.3**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	41	19	6.3	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1232	19	U	41	19	6.3	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1248	25	U	41	25	6.9	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1254	21	U	41	21	6.8	ug/Kg	☼	04/07/16 13:06	1
Aroclor 1260	**13**	**J**	41	9.5	3.3	ug/Kg	☼	04/07/16 13:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*59 - 130*	*04/05/16 20:48*	*04/07/16 13:06*	*1*
Tetrachloro-m-xylene	*78*		*44 - 130*	*04/05/16 20:48*	*04/07/16 13:06*	*1*

Client Sample ID: FP-22-0-0.5 — **Lab Sample ID: 280-81423-3**
Date Collected: 03/30/16 13:20 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	42	19	6.4	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1221	21	U	59	21	20	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1232	19	U	42	19	6.5	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1242	42	U	42	42	12	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1248	25	U	42	25	7.1	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1254	21	U	42	21	7.0	ug/Kg	☼	04/07/16 13:28	1
Aroclor 1260	**180**		42	9.7	3.3	ug/Kg	☼	04/07/16 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*59 - 130*	*04/05/16 20:48*	*04/07/16 13:28*	*1*
Tetrachloro-m-xylene	*80*		*44 - 130*	*04/05/16 20:48*	*04/07/16 13:28*	*1*

Client Sample ID: FP-24-0-0.5 — **Lab Sample ID: 280-81423-5**
Date Collected: 03/30/16 13:30 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.6**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	41	19	6.3	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1232	19	U	41	19	6.3	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1248	25	U	41	25	6.9	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1254	21	U	41	21	6.8	ug/Kg	☼	04/07/16 13:49	1
Aroclor 1260	**67**		41	9.5	3.3	ug/Kg	☼	04/07/16 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*59 - 130*	*04/05/16 20:48*	*04/07/16 13:49*	*1*
Tetrachloro-m-xylene	*77*		*44 - 130*	*04/05/16 20:48*	*04/07/16 13:49*	*1*

Client Sample ID: FP-26-0-0.5 — **Lab Sample ID: 280-81423-7**
Date Collected: 03/30/16 13:40 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 78.5**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	350	U Q	770	350	120	ug/Kg	☼	04/08/16 09:56	20
Aroclor 1221	400	U Q	1100	400	360	ug/Kg	☼	04/08/16 09:56	20
Aroclor 1232	350	U Q	770	350	120	ug/Kg	☼	04/08/16 09:56	20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-26-0-0.5 **Lab Sample ID: 280-81423-7**
Date Collected: 03/30/16 13:40 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.5**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1242	770	U Q	770	770	210	ug/Kg	☼	04/08/16 09:56	20
Aroclor 1248	470	U Q	770	470	130	ug/Kg	☼	04/08/16 09:56	20
Aroclor 1254	400	U Q	770	400	130	ug/Kg	☼	04/08/16 09:56	20
Aroclor 1260	**3700**	**Q D**	770	180	62	ug/Kg	☼	04/08/16 09:56	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*0*	*Q D*	*59 - 130*	*04/05/16 20:48*	*04/08/16 09:56*	*20*
Tetrachloro-m-xylene	*52*	*D*	*44 - 130*	*04/05/16 20:48*	*04/08/16 09:56*	*20*

Client Sample ID: FP-28-0-0.5 **Lab Sample ID: 280-81423-9**
Date Collected: 03/30/16 13:50 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 77.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	7600	U Q	17000	7600	2600	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1221	8600	U Q	24000	8600	7900	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1232	7600	U Q	17000	7600	2600	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1242	17000	U Q	17000	17000	4600	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1248	10000	U Q	17000	10000	2800	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1254	8600	U Q	17000	8600	2800	ug/Kg	☼	04/08/16 10:18	400
Aroclor 1260	**55000**	**Q D**	17000	3900	1300	ug/Kg	☼	04/08/16 10:18	400

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*0*	*Q D*	*59 - 130*	*04/05/16 20:48*	*04/08/16 10:18*	*400*
Tetrachloro-m-xylene	*0*	*Q D*	*44 - 130*	*04/05/16 20:48*	*04/08/16 10:18*	*400*

Client Sample ID: FP-30-0-0.5 **Lab Sample ID: 280-81423-11**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 76.3**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	40	18	6.1	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1221	20	U	57	20	19	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1232	18	U	40	18	6.2	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1242	40	U	40	40	11	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1248	24	U	40	24	6.7	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1254	20	U	40	20	6.6	ug/Kg	☼	04/07/16 14:54	1
Aroclor 1260	**250**		40	9.3	3.2	ug/Kg	☼	04/07/16 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*75*		*59 - 130*	*04/05/16 20:48*	*04/07/16 14:54*	*1*
Tetrachloro-m-xylene	*75*		*44 - 130*	*04/05/16 20:48*	*04/07/16 14:54*	*1*

Client Sample ID: FP-30-0-0.5-D **Lab Sample ID: 280-81423-12**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.4**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	41	19	6.4	ug/Kg	☼	04/07/16 15:16	1
Aroclor 1221	21	U	59	21	20	ug/Kg	☼	04/07/16 15:16	1
Aroclor 1232	19	U	41	19	6.4	ug/Kg	☼	04/07/16 15:16	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 15:16	1
Aroclor 1248	25	U	41	25	7.0	ug/Kg	☼	04/07/16 15:16	1
Aroclor 1254	21	U	41	21	6.9	ug/Kg	☼	04/07/16 15:16	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-30-0-0.5-D
Date Collected: 03/30/16 14:00
Date Received: 04/01/16 10:20
Lab Sample ID: 280-81423-12
Matrix: Solid
Percent Solids: 78.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1260	**120**		41	9.7	3.3	ug/Kg	☼	04/07/16 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*59 - 130*	*04/05/16 20:48*	*04/07/16 15:16*	*1*
Tetrachloro-m-xylene	*80*		*44 - 130*	*04/05/16 20:48*	*04/07/16 15:16*	*1*

Client Sample ID: FP-32-0-0.5
Date Collected: 03/30/16 14:10
Date Received: 04/01/16 10:20
Lab Sample ID: 280-81423-14
Matrix: Solid
Percent Solids: 82.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	17	U	38	17	5.8	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1221	19	U	53	19	18	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1232	17	U	38	17	5.8	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1242	38	U	38	38	10	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1248	23	U	38	23	6.4	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1254	19	U	38	19	6.3	ug/Kg	☼	04/07/16 15:37	1
Aroclor 1260	**7.8**	**J**	38	8.8	3.0	ug/Kg	☼	04/07/16 15:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*72*		*59 - 130*	*04/05/16 20:48*	*04/07/16 15:37*	*1*
Tetrachloro-m-xylene	*74*		*44 - 130*	*04/05/16 20:48*	*04/07/16 15:37*	*1*

Client Sample ID: FP-34-0-0.5
Date Collected: 03/30/16 14:20
Date Received: 04/01/16 10:20
Lab Sample ID: 280-81423-16
Matrix: Solid
Percent Solids: 75.3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	190	U J	420	190	65	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1221	220	U	600	220	200	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1232	190	U	420	190	66	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1242	420	U	420	420	120	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1248	260	U	420	260	72	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1254	220	U	420	220	71	ug/Kg	☼	04/08/16 10:39	10
Aroclor 1260	**1400**	**J D**	420	99	34	ug/Kg	☼	04/08/16 10:39	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*	*D*	*59 - 130*	*04/05/16 20:48*	*04/08/16 10:39*	*10*
Tetrachloro-m-xylene	*70*	*D*	*44 - 130*	*04/05/16 20:48*	*04/08/16 10:39*	*10*

Client Sample ID: FP-25-0-0.5
Date Collected: 03/30/16 14:30
Date Received: 04/01/16 10:20
Lab Sample ID: 280-81423-18
Matrix: Solid
Percent Solids: 80.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	39	18	6.1	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1221	20	U	56	20	19	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1232	18	U	39	18	6.1	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1242	39	U	39	39	11	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1248	24	U	39	24	6.7	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1254	20	U	39	20	6.6	ug/Kg	☼	04/07/16 17:04	1
Aroclor 1260	**86**		39	9.2	3.2	ug/Kg	☼	04/07/16 17:04	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81		59 - 130	04/05/16 20:48	04/07/16 17:04	1
Tetrachloro-m-xylene	82		44 - 130	04/05/16 20:48	04/07/16 17:04	1

Client Sample ID: FP-27-0-0.5 — **Lab Sample ID: 280-81423-20**
Date Collected: 03/30/16 14:40 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 82.7**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	17	U	38	17	5.8	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1221	20	U	54	20	18	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1232	17	U	38	17	5.9	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1242	38	U	38	38	10	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1248	23	U	38	23	6.4	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1254	20	U	38	20	6.3	ug/Kg	☼	04/07/16 17:47	1
Aroclor 1260	**66**		38	8.8	3.0	ug/Kg	☼	04/07/16 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	79		59 - 130	04/05/16 20:48	04/07/16 17:47	1
Tetrachloro-m-xylene	81		44 - 130	04/05/16 20:48	04/07/16 17:47	1

Client Sample ID: FP-29-0-0.5 — **Lab Sample ID: 280-81423-22**
Date Collected: 03/30/16 14:50 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 82.8**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	17	U	37	17	5.7	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1221	19	U	53	19	18	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1232	17	U	37	17	5.7	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1242	37	U	37	37	10	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1248	22	U	37	22	6.3	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1254	19	U	37	19	6.2	ug/Kg	☼	04/07/16 18:09	1
Aroclor 1260	**15**	**J**	37	8.6	3.0	ug/Kg	☼	04/07/16 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	71		59 - 130	04/05/16 20:48	04/07/16 18:09	1
Tetrachloro-m-xylene	74		44 - 130	04/05/16 20:48	04/07/16 18:09	1

Client Sample ID: FP-33-0-0.5 — **Lab Sample ID: 280-81423-24**
Date Collected: 03/30/16 15:00 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 79.6**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	70	U	150	70	24	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1221	80	U	220	80	73	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1232	70	U	150	70	24	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1242	150	U	150	150	43	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1248	94	U	150	94	26	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1254	80	U	150	80	26	ug/Kg	☼	04/08/16 11:44	4
Aroclor 1260	**650**	**D**	150	36	12	ug/Kg	☼	04/08/16 11:44	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	84	D	59 - 130	04/05/16 20:48	04/08/16 11:44	4
Tetrachloro-m-xylene	76	D	44 - 130	04/05/16 20:48	04/08/16 11:44	4

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: FP-36-0-0.5 | **Lab Sample ID: 280-81423-26**
Date Collected: 03/30/16 15:10 | **Matrix: Solid**
Date Received: 04/01/16 10:20 | **Percent Solids: 74.6**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	79	U	170	79	27	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1221	90	U	250	90	83	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1232	79	U	170	79	27	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1242	170	U	170	170	48	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1248	110	U	170	110	30	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1254	90	U	170	90	29	ug/Kg	☼	04/08/16 12:06	4
Aroclor 1260	**710**	**D**	170	41	14	ug/Kg	☼	04/08/16 12:06	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*90*	*D*	*59 - 130*	*04/05/16 20:48*	*04/08/16 12:06*	*4*
Tetrachloro-m-xylene	*78*	*D*	*44 - 130*	*04/05/16 20:48*	*04/08/16 12:06*	*4*

Client Sample ID: FP-37-0-0.5 | **Lab Sample ID: 280-81423-28**
Date Collected: 03/30/16 15:20 | **Matrix: Solid**
Date Received: 04/01/16 10:20 | **Percent Solids: 79.9**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	41	18	6.2	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1232	18	U	41	18	6.3	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1248	25	U	41	25	6.9	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1254	21	U	41	21	6.8	ug/Kg	☼	04/07/16 19:14	1
Aroclor 1260	**24**	**J**	41	9.5	3.3	ug/Kg	☼	04/07/16 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*59 - 130*	*04/05/16 20:48*	*04/07/16 19:14*	*1*
Tetrachloro-m-xylene	*82*		*44 - 130*	*04/05/16 20:48*	*04/07/16 19:14*	*1*

Client Sample ID: FP-35-0-0.5 | **Lab Sample ID: 280-81423-30**
Date Collected: 03/30/16 15:30 | **Matrix: Solid**
Date Received: 04/01/16 10:20 | **Percent Solids: 81.1**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	710	U Q	1600	710	240	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1221	810	U Q	2200	810	740	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1232	710	U Q	1600	710	240	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1242	1600	U Q	1600	1600	430	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1248	950	U Q	1600	950	270	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1254	810	U Q	1600	810	260	ug/Kg	☼	04/08/16 12:28	40
Aroclor 1260	**5700**	**Q D**	1600	370	130	ug/Kg	☼	04/08/16 12:28	40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*0*	*Q D*	*59 - 130*	*04/05/16 20:48*	*04/08/16 12:28*	*40*
Tetrachloro-m-xylene	*0*	*Q D*	*44 - 130*	*04/05/16 20:48*	*04/08/16 12:28*	*40*

Client Sample ID: FP-38-0-0.5 | **Lab Sample ID: 280-81423-32**
Date Collected: 03/30/16 15:40 | **Matrix: Solid**
Date Received: 04/01/16 10:20 | **Percent Solids: 80.0**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	39	18	6.1	ug/Kg	☼	04/07/16 19:57	1
Aroclor 1221	20	U	56	20	19	ug/Kg	☼	04/07/16 19:57	1
Aroclor 1232	18	U	39	18	6.1	ug/Kg	☼	04/07/16 19:57	1

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-38-0-0.5
Date Collected: 03/30/16 15:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-32
Matrix: Solid
Percent Solids: 80.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1242	39	U	39	39	11	ug/Kg	☼	04/07/16 19:57	1
Aroclor 1248	24	U	39	24	6.7	ug/Kg	☼	04/07/16 19:57	1
Aroclor 1254	20	U	39	20	6.6	ug/Kg	☼	04/07/16 19:57	1
Aroclor 1260	9.2	U	39	9.2	3.2	ug/Kg	☼	04/07/16 19:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*85*		*59 - 130*	*04/05/16 20:48*	*04/07/16 19:57*	*1*
Tetrachloro-m-xylene	*77*	*M*	*44 - 130*	*04/05/16 20:48*	*04/07/16 19:57*	*1*

Client Sample ID: FP-39-0-0.5
Date Collected: 03/30/16 15:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-34
Matrix: Solid
Percent Solids: 80.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	41	19	6.3	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1232	19	U	41	19	6.3	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1248	25	U	41	25	6.9	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1254	21	U	41	21	6.8	ug/Kg	☼	04/07/16 20:18	1
Aroclor 1260	**260**		41	9.5	3.3	ug/Kg	☼	04/07/16 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*59 - 130*	*04/05/16 20:48*	*04/07/16 20:18*	*1*
Tetrachloro-m-xylene	*82*		*44 - 130*	*04/05/16 20:48*	*04/07/16 20:18*	*1*

Client Sample ID: FP-31-0-0.5
Date Collected: 03/30/16 16:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-36
Matrix: Solid
Percent Solids: 76.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	40	18	6.2	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1232	18	U	40	18	6.3	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1242	40	U	40	40	11	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1248	24	U	40	24	6.9	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1254	21	U	40	21	6.8	ug/Kg	☼	04/07/16 20:40	1
Aroclor 1260	**40**		40	9.4	3.2	ug/Kg	☼	04/07/16 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*68*		*59 - 130*	*04/05/16 20:48*	*04/07/16 20:40*	*1*
Tetrachloro-m-xylene	*77*		*44 - 130*	*04/05/16 20:48*	*04/07/16 20:40*	*1*

Client Sample ID: FP-40-0-0.5
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-38
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	19	U	41	19	6.3	ug/Kg	☼	04/07/16 21:02	1
Aroclor 1221	21	U	58	21	19	ug/Kg	☼	04/07/16 21:02	1
Aroclor 1232	19	U	41	19	6.3	ug/Kg	☼	04/07/16 21:02	1
Aroclor 1242	41	U	41	41	11	ug/Kg	☼	04/07/16 21:02	1
Aroclor 1248	25	U	41	25	6.9	ug/Kg	☼	04/07/16 21:02	1
Aroclor 1254	21	U	41	21	6.8	ug/Kg	☼	04/07/16 21:02	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: FP-40-0-0.5 **Lab Sample ID: 280-81423-38**
Date Collected: 03/30/16 16:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.1**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1260	**7.4**	**J**	41	9.5	3.3	ug/Kg	☼	04/07/16 21:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*59 - 130*	*04/05/16 20:48*	*04/07/16 21:02*	*1*
Tetrachloro-m-xylene	*79*		*44 - 130*	*04/05/16 20:48*	*04/07/16 21:02*	*1*

Client Sample ID: ER-03302016 **Lab Sample ID: 280-81423-40**
Date Collected: 03/30/16 16:20 **Matrix: Water**
Date Received: 04/01/16 10:20

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	0.606	U	1.01	0.606	0.172	ug/L		04/13/16 15:21	1
Aroclor 1221	0.258	U	1.01	0.258	0.182	ug/L		04/13/16 15:21	1
Aroclor 1232	0.307	U	1.01	0.307	0.131	ug/L		04/13/16 15:21	1
Aroclor 1242	0.307	U	1.01	0.307	0.105	ug/L		04/13/16 15:21	1
Aroclor 1248	0.606	U	1.01	0.606	0.172	ug/L		04/13/16 15:21	1
Aroclor 1254	0.258	U	1.01	0.258	0.141	ug/L		04/13/16 15:21	1
Aroclor 1260	0.307	U	1.01	0.307	0.0898	ug/L		04/13/16 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*96*		*30 - 136*	*04/04/16 14:30*	*04/13/16 15:21*	*1*
Tetrachloro-m-xylene	*77*		*25 - 120*	*04/04/16 14:30*	*04/13/16 15:21*	*1*

Client Sample ID: FP-40-0-0.5-D **Lab Sample ID: 280-81423-41**
Date Collected: 03/30/16 16:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.8**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	18	U	39	18	6.0	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1221	20	U	56	20	18	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1232	18	U	39	18	6.1	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1242	39	U	39	39	11	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1248	24	U	39	24	6.7	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1254	20	U	39	20	6.5	ug/Kg	☼	04/08/16 07:06	1
Aroclor 1260	**7.4**	**J**	39	9.1	3.1	ug/Kg	☼	04/08/16 07:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*72*		*59 - 130*	*04/05/16 18:02*	*04/08/16 07:06*	*1*
Tetrachloro-m-xylene	*85*		*44 - 130*	*04/05/16 18:02*	*04/08/16 07:06*	*1*

General Chemistry

Client Sample ID: FP-23-0-0.5 **Lab Sample ID: 280-81423-1**
Date Collected: 03/30/16 13:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 80.3**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	**19.7**		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	**80.3**		0.1	0.1	0.1	%		04/04/16 16:36	1

General Chemistry

Client Sample ID: FP-22-0-0.5
Date Collected: 03/30/16 13:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-3
Matrix: Solid
Percent Solids: 75.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	25.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.0		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-24-0-0.5
Date Collected: 03/30/16 13:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-5
Matrix: Solid
Percent Solids: 75.6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	24.4		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.6		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-26-0-0.5
Date Collected: 03/30/16 13:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-7
Matrix: Solid
Percent Solids: 78.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	21.5		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	78.5		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-28-0-0.5
Date Collected: 03/30/16 13:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-9
Matrix: Solid
Percent Solids: 77.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	23.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	77.0		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-30-0-0.5
Date Collected: 03/30/16 14:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-11
Matrix: Solid
Percent Solids: 76.3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	23.7		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	76.3		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-30-0-0.5-D
Date Collected: 03/30/16 14:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-12
Matrix: Solid
Percent Solids: 78.4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	21.6		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	78.4		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-32-0-0.5
Date Collected: 03/30/16 14:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-14
Matrix: Solid
Percent Solids: 82.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	17.9		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	82.1		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-34-0-0.5
Date Collected: 03/30/16 14:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-16
Matrix: Solid
Percent Solids: 75.3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	24.7		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	75.3		0.1	0.1	0.1	%		04/04/16 16:36	1

General Chemistry

Client Sample ID: FP-25-0-0.5
Date Collected: 03/30/16 14:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-18
Matrix: Solid
Percent Solids: 80.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-27-0-0.5
Date Collected: 03/30/16 14:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-20
Matrix: Solid
Percent Solids: 82.7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	17.3		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	82.7		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-29-0-0.5
Date Collected: 03/30/16 14:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-22
Matrix: Solid
Percent Solids: 82.8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	17.2		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	82.8		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-33-0-0.5
Date Collected: 03/30/16 15:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-24
Matrix: Solid
Percent Solids: 79.6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	20.3		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	79.7		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-36-0-0.5
Date Collected: 03/30/16 15:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-26
Matrix: Solid
Percent Solids: 74.6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	25.4		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	74.6		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-37-0-0.5
Date Collected: 03/30/16 15:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-28
Matrix: Solid
Percent Solids: 79.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	20.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	79.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-35-0-0.5
Date Collected: 03/30/16 15:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-30
Matrix: Solid
Percent Solids: 81.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	18.9		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	81.1		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-38-0-0.5
Date Collected: 03/30/16 15:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-32
Matrix: Solid
Percent Solids: 80.0

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	20.0		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.0		0.1	0.1	0.1	%		04/04/16 16:36	1

General Chemistry

Client Sample ID: FP-39-0-0.5
Date Collected: 03/30/16 15:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-34
Matrix: Solid
Percent Solids: 80.5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.5		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.5		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-31-0-0.5
Date Collected: 03/30/16 16:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-36
Matrix: Solid
Percent Solids: 76.9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	23.1		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	76.9		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-40-0-0.5
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-38
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.9		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.1		0.1	0.1	0.1	%		04/04/16 16:36	1

Client Sample ID: FP-40-0-0.5-D
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-41
Matrix: Solid
Percent Solids: 80.8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Percent Moisture	19.2		0.1	0.1	0.1	%		04/04/16 16:36	1
Percent Solids	80.8		0.1	0.1	0.1	%		04/04/16 16:36	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (59-130)	TCX1 (44-130)
280-81423-1	FP-23-0-0.5	70	78
280-81423-14	FP-32-0-0.5	72	74
280-81423-22	FP-29-0-0.5	71	74
280-81423-28	FP-37-0-0.5	76	82
280-81423-38	FP-40-0-0.5	70	79
280-81423-41	FP-40-0-0.5-D	72	85

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (59-130)	TCX2 (44-130)
280-81423-3	FP-22-0-0.5	82	80
280-81423-5	FP-24-0-0.5	80	77
280-81423-7	FP-26-0-0.5	0 Q D	52 D
280-81423-9	FP-28-0-0.5	0 Q D	0 Q D
280-81423-11	FP-30-0-0.5	75	75
280-81423-12	FP-30-0-0.5-D	79	80
280-81423-16	FP-34-0-0.5	64 D	70 D
280-81423-16 MS	FP-34-0-0.5	73 D	75 D
280-81423-16 MSD	FP-34-0-0.5	76 D	77 D
280-81423-18	FP-25-0-0.5	81	82
280-81423-20	FP-27-0-0.5	79	81
280-81423-24	FP-33-0-0.5	84 D	76 D
280-81423-26	FP-36-0-0.5	90 D	78 D
280-81423-30	FP-35-0-0.5	0 Q D	0 Q D
280-81423-32	FP-38-0-0.5	85	77 M
280-81423-34	FP-39-0-0.5	79	82
280-81423-36	FP-31-0-0.5	68	77
LCS 280-319512/2-A	Lab Control Sample	100	90
LCS 280-319529/2-A	Lab Control Sample	100	94
MB 280-319512/1-A	Method Blank	102	94
MB 280-319529/1-A	Method Blank	100	98

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (30-136)	TCX2 (25-120)
280-81423-40	ER-03302016	96	77

Surrogate Summary

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-136)	(25-120)
LCS 280-319331/6-A	Lab Control Sample	100	59
LCSD 280-319331/7-A	Lab Control Sample Dup	93	72
MB 280-319331/1-A	Method Blank	88	54

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-319331/1-A
Matrix: Water
Analysis Batch: 320550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 319331

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	0.600	U	1.00	0.600	0.170	ug/L		04/13/16 14:16	1
Aroclor 1221	0.256	U	1.00	0.256	0.180	ug/L		04/13/16 14:16	1
Aroclor 1232	0.304	U	1.00	0.304	0.130	ug/L		04/13/16 14:16	1
Aroclor 1242	0.304	U	1.00	0.304	0.104	ug/L		04/13/16 14:16	1
Aroclor 1248	0.600	U	1.00	0.600	0.170	ug/L		04/13/16 14:16	1
Aroclor 1254	0.256	U	1.00	0.256	0.140	ug/L		04/13/16 14:16	1
Aroclor 1260	0.304	U	1.00	0.304	0.0890	ug/L		04/13/16 14:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*88*		*30 - 136*	*04/04/16 14:30*	*04/13/16 14:16*	*1*
Tetrachloro-m-xylene	*54*		*25 - 120*	*04/04/16 14:30*	*04/13/16 14:16*	*1*

Lab Sample ID: LCS 280-319331/6-A
Matrix: Water
Analysis Batch: 320550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 319331

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	2.00	1.679		ug/L		84	46 - 129
Aroclor 1260	2.00	2.006		ug/L		100	45 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*30 - 136*
Tetrachloro-m-xylene	*59*		*25 - 120*

Lab Sample ID: LCSD 280-319331/7-A
Matrix: Water
Analysis Batch: 320550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 319331

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	2.00	1.642		ug/L		82	46 - 129	2	30
Aroclor 1260	2.00	1.862		ug/L		93	45 - 134	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*93*		*30 - 136*
Tetrachloro-m-xylene	*72*		*25 - 120*

Lab Sample ID: MB 280-319512/1-A
Matrix: Solid
Analysis Batch: 319773

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 319512

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	15	U	33	15	5.1	ug/Kg		04/07/16 22:06	1
Aroclor 1221	17	U	47	17	16	ug/Kg		04/07/16 22:06	1
Aroclor 1232	15	U	33	15	5.1	ug/Kg		04/07/16 22:06	1
Aroclor 1242	33	U	33	33	9.1	ug/Kg		04/07/16 22:06	1
Aroclor 1248	20	U	33	20	5.6	ug/Kg		04/07/16 22:06	1
Aroclor 1254	17	U	33	17	5.5	ug/Kg		04/07/16 22:06	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 280-319512/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 319773
Prep Batch: 319512

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1260	7.7	U	33	7.7	2.7	ug/Kg		04/07/16 22:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*102*		*59 - 130*	*04/05/16 18:02*	*04/07/16 22:06*	*1*
Tetrachloro-m-xylene	*94*		*44 - 130*	*04/05/16 18:02*	*04/07/16 22:06*	*1*

Lab Sample ID: LCS 280-319512/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 319773
Prep Batch: 319512

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	66.7	56.5		ug/Kg		85	47 - 134
Aroclor 1260	66.7	61.2		ug/Kg		92	53 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*59 - 130*
Tetrachloro-m-xylene	*90*		*44 - 130*

Lab Sample ID: MB 280-319529/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 319773
Prep Batch: 319529

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aroclor 1016	15	U	33	15	5.1	ug/Kg		04/07/16 12:23	1
Aroclor 1221	17	U	47	17	16	ug/Kg		04/07/16 12:23	1
Aroclor 1232	15	U	33	15	5.1	ug/Kg		04/07/16 12:23	1
Aroclor 1242	33	U	33	33	9.1	ug/Kg		04/07/16 12:23	1
Aroclor 1248	20	U	33	20	5.6	ug/Kg		04/07/16 12:23	1
Aroclor 1254	17	U	33	17	5.5	ug/Kg		04/07/16 12:23	1
Aroclor 1260	7.7	U	33	7.7	2.7	ug/Kg		04/07/16 12:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*100*		*59 - 130*	*04/05/16 20:48*	*04/07/16 12:23*	*1*
Tetrachloro-m-xylene	*98*		*44 - 130*	*04/05/16 20:48*	*04/07/16 12:23*	*1*

Lab Sample ID: LCS 280-319529/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 319773
Prep Batch: 319529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	66.7	62.2		ug/Kg		93	47 - 134
Aroclor 1260	66.7	64.3		ug/Kg		96	53 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*100*		*59 - 130*
Tetrachloro-m-xylene	*94*		*44 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 280-81423-16 MS
Matrix: Solid
Analysis Batch: 319934

Client Sample ID: FP-34-0-0.5
Prep Type: Total/NA
Prep Batch: 319529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	190	U J	87.6	86.0	J D	ug/Kg	☼	98	47 - 134
Aroclor 1260	1400	J D	87.6	3060	4 D	ug/Kg	☼	1885	53 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*73*	*D*	*59 - 130*
Tetrachloro-m-xylene	*75*	*D*	*44 - 130*

Lab Sample ID: 280-81423-16 MSD
Matrix: Solid
Analysis Batch: 319934

Client Sample ID: FP-34-0-0.5
Prep Type: Total/NA
Prep Batch: 319529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	190	U J	84.8	127	J D	ug/Kg	☼	150	47 - 134	39	30
Aroclor 1260	1400	J D	84.8	5000	J 4 D	ug/Kg	☼	4230	53 - 140	48	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*76*	*D*	*59 - 130*
Tetrachloro-m-xylene	*77*	*D*	*44 - 130*

Method: Moisture - Percent Moisture

Lab Sample ID: 280-81423-1 DU
Matrix: Solid
Analysis Batch: 319349

Client Sample ID: FP-23-0-0.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	19.7		19.3		%		2	20
Percent Solids	80.3		80.7		%		0.5	20

Lab Sample ID: 280-81423-5 DU
Matrix: Solid
Analysis Batch: 319349

Client Sample ID: FP-24-0-0.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	24.4		24.5		%		0.3	20
Percent Solids	75.6		75.5		%		0.1	20

GC Semi VOA

Prep Batch: 319331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-40	ER-03302016	Total/NA	Water	3510C	
LCS 280-319331/6-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-319331/7-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 280-319331/1-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 319512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-41	FP-40-0-0.5-D	Total/NA	Solid	3546	
LCS 280-319512/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-319512/1-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 319529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-1	FP-23-0-0.5	Total/NA	Solid	3546	
280-81423-3	FP-22-0-0.5	Total/NA	Solid	3546	
280-81423-5	FP-24-0-0.5	Total/NA	Solid	3546	
280-81423-7	FP-26-0-0.5	Total/NA	Solid	3546	
280-81423-9	FP-28-0-0.5	Total/NA	Solid	3546	
280-81423-11	FP-30-0-0.5	Total/NA	Solid	3546	
280-81423-12	FP-30-0-0.5-D	Total/NA	Solid	3546	
280-81423-14	FP-32-0-0.5	Total/NA	Solid	3546	
280-81423-16	FP-34-0-0.5	Total/NA	Solid	3546	
280-81423-16 MS	FP-34-0-0.5	Total/NA	Solid	3546	
280-81423-16 MSD	FP-34-0-0.5	Total/NA	Solid	3546	
280-81423-18	FP-25-0-0.5	Total/NA	Solid	3546	
280-81423-20	FP-27-0-0.5	Total/NA	Solid	3546	
280-81423-22	FP-29-0-0.5	Total/NA	Solid	3546	
280-81423-24	FP-33-0-0.5	Total/NA	Solid	3546	
280-81423-26	FP-36-0-0.5	Total/NA	Solid	3546	
280-81423-28	FP-37-0-0.5	Total/NA	Solid	3546	
280-81423-30	FP-35-0-0.5	Total/NA	Solid	3546	
280-81423-32	FP-38-0-0.5	Total/NA	Solid	3546	
280-81423-34	FP-39-0-0.5	Total/NA	Solid	3546	
280-81423-36	FP-31-0-0.5	Total/NA	Solid	3546	
280-81423-38	FP-40-0-0.5	Total/NA	Solid	3546	
LCS 280-319529/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 280-319529/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 319773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-1	FP-23-0-0.5	Total/NA	Solid	8082A	319529
280-81423-3	FP-22-0-0.5	Total/NA	Solid	8082A	319529
280-81423-5	FP-24-0-0.5	Total/NA	Solid	8082A	319529
280-81423-11	FP-30-0-0.5	Total/NA	Solid	8082A	319529
280-81423-12	FP-30-0-0.5-D	Total/NA	Solid	8082A	319529
280-81423-14	FP-32-0-0.5	Total/NA	Solid	8082A	319529
280-81423-18	FP-25-0-0.5	Total/NA	Solid	8082A	319529
280-81423-20	FP-27-0-0.5	Total/NA	Solid	8082A	319529
280-81423-22	FP-29-0-0.5	Total/NA	Solid	8082A	319529
280-81423-28	FP-37-0-0.5	Total/NA	Solid	8082A	319529
280-81423-32	FP-38-0-0.5	Total/NA	Solid	8082A	319529

GC Semi VOA (Continued)

Analysis Batch: 319773 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-34	FP-39-0-0.5	Total/NA	Solid	8082A	319529
280-81423-36	FP-31-0-0.5	Total/NA	Solid	8082A	319529
280-81423-38	FP-40-0-0.5	Total/NA	Solid	8082A	319529
280-81423-41	FP-40-0-0.5-D	Total/NA	Solid	8082A	319512
LCS 280-319512/2-A	Lab Control Sample	Total/NA	Solid	8082A	319512
LCS 280-319529/2-A	Lab Control Sample	Total/NA	Solid	8082A	319529
MB 280-319512/1-A	Method Blank	Total/NA	Solid	8082A	319512
MB 280-319529/1-A	Method Blank	Total/NA	Solid	8082A	319529

Analysis Batch: 319934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-7	FP-26-0-0.5	Total/NA	Solid	8082A	319529
280-81423-9	FP-28-0-0.5	Total/NA	Solid	8082A	319529
280-81423-16	FP-34-0-0.5	Total/NA	Solid	8082A	319529
280-81423-16 MS	FP-34-0-0.5	Total/NA	Solid	8082A	319529
280-81423-16 MSD	FP-34-0-0.5	Total/NA	Solid	8082A	319529
280-81423-24	FP-33-0-0.5	Total/NA	Solid	8082A	319529
280-81423-26	FP-36-0-0.5	Total/NA	Solid	8082A	319529
280-81423-30	FP-35-0-0.5	Total/NA	Solid	8082A	319529

Analysis Batch: 320550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-40	ER-03302016	Total/NA	Water	8082A	319331
LCS 280-319331/6-A	Lab Control Sample	Total/NA	Water	8082A	319331
LCSD 280-319331/7-A	Lab Control Sample Dup	Total/NA	Water	8082A	319331
MB 280-319331/1-A	Method Blank	Total/NA	Water	8082A	319331

General Chemistry

Analysis Batch: 319349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-1	FP-23-0-0.5	Total/NA	Solid	Moisture	
280-81423-1 DU	FP-23-0-0.5	Total/NA	Solid	Moisture	
280-81423-3	FP-22-0-0.5	Total/NA	Solid	Moisture	
280-81423-5	FP-24-0-0.5	Total/NA	Solid	Moisture	
280-81423-5 DU	FP-24-0-0.5	Total/NA	Solid	Moisture	
280-81423-7	FP-26-0-0.5	Total/NA	Solid	Moisture	
280-81423-9	FP-28-0-0.5	Total/NA	Solid	Moisture	
280-81423-11	FP-30-0-0.5	Total/NA	Solid	Moisture	
280-81423-12	FP-30-0-0.5-D	Total/NA	Solid	Moisture	
280-81423-14	FP-32-0-0.5	Total/NA	Solid	Moisture	
280-81423-16	FP-34-0-0.5	Total/NA	Solid	Moisture	
280-81423-18	FP-25-0-0.5	Total/NA	Solid	Moisture	
280-81423-20	FP-27-0-0.5	Total/NA	Solid	Moisture	
280-81423-22	FP-29-0-0.5	Total/NA	Solid	Moisture	
280-81423-24	FP-33-0-0.5	Total/NA	Solid	Moisture	
280-81423-26	FP-36-0-0.5	Total/NA	Solid	Moisture	
280-81423-28	FP-37-0-0.5	Total/NA	Solid	Moisture	
280-81423-30	FP-35-0-0.5	Total/NA	Solid	Moisture	
280-81423-32	FP-38-0-0.5	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 319349 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-81423-34	FP-39-0-0.5	Total/NA	Solid	Moisture	
280-81423-36	FP-31-0-0.5	Total/NA	Solid	Moisture	
280-81423-38	FP-40-0-0.5	Total/NA	Solid	Moisture	
280-81423-41	FP-40-0-0.5-D	Total/NA	Solid	Moisture	

Client Sample ID: FP-23-0-0.5 — **Lab Sample ID: 280-81423-1**
Date Collected: 03/30/16 13:10 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-23-0-0.5 — **Lab Sample ID: 280-81423-1**
Date Collected: 03/30/16 13:10 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 80.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.3 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	30.3 g	10 mL	319773	04/07/16 13:06	TDJ	TAL DEN

Client Sample ID: FP-22-0-0.5 — **Lab Sample ID: 280-81423-3**
Date Collected: 03/30/16 13:20 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-22-0-0.5 — **Lab Sample ID: 280-81423-3**
Date Collected: 03/30/16 13:20 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.7 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	31.7 g	10 mL	319773	04/07/16 13:28	TDJ	TAL DEN

Client Sample ID: FP-24-0-0.5 — **Lab Sample ID: 280-81423-5**
Date Collected: 03/30/16 13:30 — **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-24-0-0.5 — **Lab Sample ID: 280-81423-5**
Date Collected: 03/30/16 13:30 — **Matrix: Solid**
Date Received: 04/01/16 10:20 — **Percent Solids: 75.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.1 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	32.1 g	10 mL	319773	04/07/16 13:49	TDJ	TAL DEN

Client Sample ID: FP-26-0-0.5 **Lab Sample ID: 280-81423-7**
Date Collected: 03/30/16 13:40 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-26-0-0.5 **Lab Sample ID: 280-81423-7**
Date Collected: 03/30/16 13:40 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.7 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		20	32.7 g	10 mL	319934	04/08/16 09:56	TDJ	TAL DEN

Client Sample ID: FP-28-0-0.5 **Lab Sample ID: 280-81423-9**
Date Collected: 03/30/16 13:50 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-28-0-0.5 **Lab Sample ID: 280-81423-9**
Date Collected: 03/30/16 13:50 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 77.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.7 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		400	30.7 g	10 mL	319934	04/08/16 10:18	TDJ	TAL DEN

Client Sample ID: FP-30-0-0.5 **Lab Sample ID: 280-81423-11**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-30-0-0.5 **Lab Sample ID: 280-81423-11**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 76.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.7 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	32.7 g	10 mL	319773	04/07/16 14:54	TDJ	TAL DEN

Client Sample ID: FP-30-0-0.5-D **Lab Sample ID: 280-81423-12**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-30-0-0.5-D **Lab Sample ID: 280-81423-12**
Date Collected: 03/30/16 14:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 78.4**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.5 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	30.5 g	10 mL	319773	04/07/16 15:16	TDJ	TAL DEN

Client Sample ID: FP-32-0-0.5 **Lab Sample ID: 280-81423-14**
Date Collected: 03/30/16 14:10 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-32-0-0.5 **Lab Sample ID: 280-81423-14**
Date Collected: 03/30/16 14:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 82.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.1 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	32.1 g	10 mL	319773	04/07/16 15:37	TDJ	TAL DEN

Client Sample ID: FP-34-0-0.5 **Lab Sample ID: 280-81423-16**
Date Collected: 03/30/16 14:20 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-34-0-0.5 **Lab Sample ID: 280-81423-16**
Date Collected: 03/30/16 14:20 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 75.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.0 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		10	31.0 g	10 mL	319934	04/08/16 10:39	TDJ	TAL DEN

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Client Sample ID: FP-25-0-0.5
Date Collected: 03/30/16 14:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-25-0-0.5
Date Collected: 03/30/16 14:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-18
Matrix: Solid
Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.0 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	31.0 g	10 mL	319773	04/07/16 17:04	TDJ	TAL DEN

Client Sample ID: FP-27-0-0.5
Date Collected: 03/30/16 14:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-27-0-0.5
Date Collected: 03/30/16 14:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-20
Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.6 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	31.6 g	10 mL	319773	04/07/16 17:47	TDJ	TAL DEN

Client Sample ID: FP-29-0-0.5
Date Collected: 03/30/16 14:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-22
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-29-0-0.5
Date Collected: 03/30/16 14:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-22
Matrix: Solid
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.3 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	32.3 g	10 mL	319773	04/07/16 18:09	TDJ	TAL DEN

Client Sample ID: FP-33-0-0.5 **Lab Sample ID: 280-81423-24**
Date Collected: 03/30/16 15:00 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-33-0-0.5 **Lab Sample ID: 280-81423-24**
Date Collected: 03/30/16 15:00 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 79.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			32.1 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		4	32.1 g	10 mL	319934	04/08/16 11:44	TDJ	TAL DEN

Client Sample ID: FP-36-0-0.5 **Lab Sample ID: 280-81423-26**
Date Collected: 03/30/16 15:10 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-36-0-0.5 **Lab Sample ID: 280-81423-26**
Date Collected: 03/30/16 15:10 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 74.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.4 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		4	30.4 g	10 mL	319934	04/08/16 12:06	TDJ	TAL DEN

Client Sample ID: FP-37-0-0.5 **Lab Sample ID: 280-81423-28**
Date Collected: 03/30/16 15:20 **Matrix: Solid**
Date Received: 04/01/16 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-37-0-0.5 **Lab Sample ID: 280-81423-28**
Date Collected: 03/30/16 15:20 **Matrix: Solid**
Date Received: 04/01/16 10:20 **Percent Solids: 79.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.6 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	30.6 g	10 mL	319773	04/07/16 19:14	TDJ	TAL DEN

Client Sample ID: FP-35-0-0.5
Date Collected: 03/30/16 15:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-35-0-0.5
Date Collected: 03/30/16 15:30
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-30
Matrix: Solid
Percent Solids: 81.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.2 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		40	31.2 g	10 mL	319934	04/08/16 12:28	TDJ	TAL DEN

Client Sample ID: FP-38-0-0.5
Date Collected: 03/30/16 15:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-32
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-38-0-0.5
Date Collected: 03/30/16 15:40
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-32
Matrix: Solid
Percent Solids: 80.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.5 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	31.5 g	10 mL	319773	04/07/16 19:57	TDJ	TAL DEN

Client Sample ID: FP-39-0-0.5
Date Collected: 03/30/16 15:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-34
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-39-0-0.5
Date Collected: 03/30/16 15:50
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-34
Matrix: Solid
Percent Solids: 80.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.2 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	30.2 g	10 mL	319773	04/07/16 20:18	TDJ	TAL DEN

Client Sample ID: FP-31-0-0.5
Date Collected: 03/30/16 16:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-36
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-31-0-0.5
Date Collected: 03/30/16 16:00
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-36
Matrix: Solid
Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.9 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	31.9 g	10 mL	319773	04/07/16 20:40	TDJ	TAL DEN

Client Sample ID: FP-40-0-0.5
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-38
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Client Sample ID: FP-40-0-0.5
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-38
Matrix: Solid
Percent Solids: 80.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.3 g	10 mL	319529	04/05/16 20:48	KI	TAL DEN
Total/NA	Analysis	8082A		1	30.3 g	10 mL	319773	04/07/16 21:02	TDJ	TAL DEN

Client Sample ID: ER-03302016
Date Collected: 03/30/16 16:20
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-40
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			247.7 mL	5 mL	319331	04/04/16 14:30	JDW	TAL DEN
Total/NA	Analysis	8082A		1	247.7 mL	5 mL	320550	04/13/16 15:21	TDJ	TAL DEN

Client Sample ID: FP-40-0-0.5-D
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-41
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			319349	04/04/16 16:36	SVC	TAL DEN

Lab Chronicle

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Client Sample ID: FP-40-0-0.5-D
Date Collected: 03/30/16 16:10
Date Received: 04/01/16 10:20

Lab Sample ID: 280-81423-41
Matrix: Solid
Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.3 g	10 mL	319512	04/05/16 18:02	MDS	TAL DEN
Total/NA	Analysis	8082A		1	31.3 g	10 mL	319773	04/08/16 07:06	TDJ	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Tetra Tech EC, Inc.
Project/Site: NSA Crane CTO WE38

TestAmerica Job ID: 280-81423-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Login Sample Receipt Checklist

Client: Tetra Tech EC, Inc.

Job Number: 280-81423-1

Login Number: 81423
List Number: 1
Creator: Soto, Mayra A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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5090
Ser PRX4/16016

U.S. Environmental Protection Agency, Region V
Regional Administrator
Regional PCB Coordinator (LU-9J)
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Ramanauskas:

Naval Facility Engineering Command Mid-Atlantic, Public Works Department, Crane request approval for cleanup and disposal of polychlorinated biphenyls (PCBs) from Solid Waste Management Unit (SWMU) 17 under 40 CFR 761.61(c). The PCB cleanup and disposal activities will be conducted per the approved Interim Measures Work Plan.

My signature serves as certification that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file in Building 3245 at Naval Support Activity Crane, and are available for EPA inspection. In addition, the permit required Certification Statement is also provided for your records.

If you require any further information, my point of contact is Thomas J. Brent, telephone 812-854-6160 or email thomas.brent@navy.mil.

Sincerely,

J. A. RIGGINS
Environmental Division Director

Enclosure: 1. Certification Statement

Copy to:
ADMINISTRATIVE RECORD
NAVFAC MIDLANT (Linda Cole)
PRX4
1023
IDEM (Doug Griffin)
TtEC (Deric Kearns)
IMWP Copy

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE

Environmental Protection Mgr
TITLE

5/18/16
DATE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 10 2016

REPLY TO THE ATTENTION OF:

Mr. Tom Brent
Naval Surface Warfare Center
EPD, Code 0592-TB Bldg 3260
300 Highway 361
Crane, Indiana 47522-5001

RE: Interim Measures Work Plan – 40 CFR §761.61(c) Approval
SWMU 17, PCB Capacitor Burial/Pole Yard
Naval Support Activity, Crane, Indiana
IN5 170 023 498

Dear Mr. Brent:

On May 10, 2016, the U.S. Department of the Navy (Navy) requested approval of an Interim Measures Work Plan (IMWP) under the risk-based disposal provisions of the polychlorinated biphenyl (PCB) regulations at 40 Code of Federal Regulations (CFR) §761.61(c). The Navy provided a written certification regarding the PCB cleanup as required under 40 CFR §761.61(a)(3)(i)(E). Under the Toxic Substances Control Act (TSCA) delegation 12-5, the Regional Administrator has redelegated his authority to the Director of the Land and Chemicals Division.

The IMWP addresses the removal of PCB contamination in excess of 1 milligram per kilogram (mg/kg) associated with a concrete culvert, soils, sediments, and bedrock within a drainage ditch at Solid Waste Management Unit (SWMU) #17 – PCB Capacitor Burial/Pole Yard located at the Naval Support Activity (NSA) facility in Crane, Indiana. The Navy is conducting the PCB cleanup and corrective action measures under a Resource Conservation and Recovery Act operating permit issued by the Indiana Department of Environmental Management (IDEM).

EPA provided comments to the Navy on the draft final version of the IMWP. The Navy responded to EPA's comments on June 7, 2016 and submitted the final IMWP on June 10, 2016. EPA is approving the Navy's cleanup and disposal of these PCB Remediation Wastes under 40 CFR § 761.61(c) with the following conditions:

1) The Navy will remove SWMU #17 PCB impacted concrete, soils, and sediments for off-site disposal and perform confirmation sampling in accordance with Section 2.6 of the IMWP.

2) PCB remediation waste ≥ 50 mg/kg will be disposed of off-site based on in-situ concentrations in accordance 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*iii*).

3) PCB remediation waste at concentrations of < 50 mg/kg PCB will be disposed of off-site based on in-situ concentrations in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*ii*) and (a)(5)(v)(A) of this section.

The Navy is responsible for ensuring continued compliance with this approval, all applicable provisions of TSCA and the federal PCB regulations. Any departure from the conditions set forth in this letter or the June 10, 2016 IMWP, referenced above, must receive prior written authorization from the Remediation and Reuse Branch of the Land and Chemicals Division.

This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by the Navy are authorized to conduct the activities set forth in the IMWP. The Navy is responsible for ensuring that it has selected transporters and disposal facilities that are authorized to conduct these activities in accordance with all applicable federal, state, and local statues and regulations. This letter does not relieve the Navy from compliance with any other federal, state or local regulation and does not preclude EPA from initiating any enforcement action, including an action seeking civil penalties for any violation of federal regulations.

If you have any questions regarding this matter, please contact me or Peter Ramanauskas of my staff at (312) 886-7890.

Sincerely,

Margaret M. Guerriero
Director
Land and Chemicals Division

cc: Mr. Doug Griffin, IDEM